THE AMERICAN REVIEW OF REVIEWS

EDITED BY ALBERT SHAW

NOVEMBER, 1909

MAN LEARNS TO FLY

Four Illustrated Articles—Exactly How Aeroplanes are Built—What They Can Do and What They May Do—How It Feels to Fly—The Dirigible, or "Lighter-than-Air" Machine

The Business of Governing New York City

England and Germany—Peace or War?

Hudson-Fulton Art Exhibition

The New Music Season

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CONTENTS FOR NOVEMBER, 1909.

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KNUD RASMUSSEN, DANISH AUTHORITY ON GREENLAND.

The controversy over Dr. Cook's claim that he reached the North Pole has grown steadily in interest, not only with American and European newspaper readers but also with men of special scientific attainments who can speak with knowledge upon the precise questions involved. The highest authority upon the Eskimos and their life, and also one of the greatest authorities upon travel in the polar regions, is Mr. Knud Rasmussen, a Danish scientist and man of letters, who has spent years in different parts of Greenland, and whose studies of the life and folklore of the northern tribes can hardly be praised too highly. Rasmussen is about to arrive at Copenhagen from Greenland, and he will be in a position to assist the Danish University in its work of passing upon the records and claims of Dr. Cook. Meanwhile, there appeared in the press of October 21 a remarkable preliminary report sent from North Greenland by Rasmussen on September 25 and addressed to his wife in Copenhagen. This report, based in the main upon inquiries among the Eskimo people, confirms all that Dr. Cook has said, and may justly be taken by the public as testimony of high importance. It will outweigh the statements of those who are attacking Dr. Cook's truthfulness, until the final report is made. Rasmussen is the son of a Danish clergyman who was for twenty years a missionary in Greenland, and the mother of Rasmussen was one of the Christianized Eskimos of South Greenland. Rasmussen was the head of the Danish literary expedition of June, 1902, which made a long sojourn in Greenland with results so important that its work was made official by the Danish Government. A part of Rasmussen's writing was translated in England and published last year in a volume entitled "The People of the Polar North," with many illustrations by Count Harald Moltke, a Danish officer and artist who was a member of the expedition. The portrait shown above is from one of Moltke's drawings.

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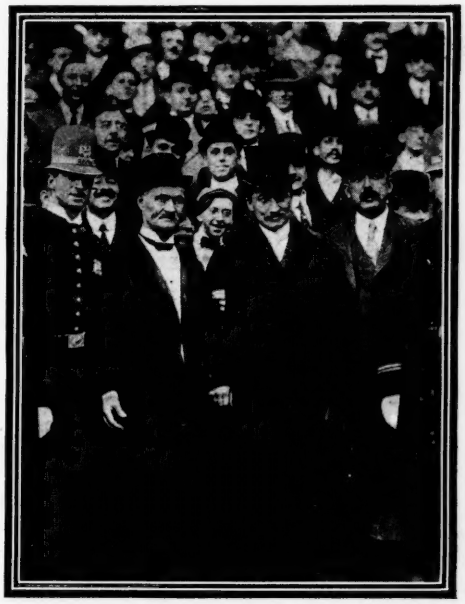
THE PROGRESS OF THE WORLD.

Dr. Cook and His Ordeal.

So many and so great are the incidental discomforts of fame that only bold men of good digestion and strong nerves should ever try to make their way along the thorny path of ambition toward the goal of pre-eminence and popular note. Dr. Cook seems to have the rare qualities that fit a man for the ordeal of publicity. He has been ridiculed and aspersed, has been denounced as liar and fake and fraud; yet he goes calmly on accepting municipal honors,—as, for example, from the Board of Aldermen of New York City last month,—and filling lucrative lecture engagements with ready industry and unfailing fluency. Dr. Cook made his Arctic journey and sojourn upon his own responsibility, without involving the credit of any government, scientific body, or association. He says that he was so fortunate in his sledge journey as to have reached the highest possible point of latitude. Many people believe him and some do not. The circumstances are such that it would be hard to prove absolutely that Dr. Cook did not reach the Pole, even if he were guilty of misstatement or the victim of erroneous calculations. But no man of his education and experience would care to make so hazardous and protracted a journey if he were not desirous of obtaining full credit for his achievements,—and every explorer of his grade of intelligence knows full well that to obtain such credit he must bring back with him certain records and proof that the scientific world would recognize as tending to establish his claim.



Dr. Cook. Bird S. Coler.

DR. COOK IN FRONT OF THE NEW YORK CITY HALL LAST MONTH.

The Scientists Waiting for Proofs.

The scientific world was entirely ready to welcome Dr. Cook, and it has been, and is yet, thoroughly ready to pass upon all his records and proofs, and to examine them from the standpoint of a presumption that Dr. Cook is not a romancer, but a real explorer and a man of the scientific spirit. Dr. Cook was accepted at Copenhagen upon the face of his statements, with the distinct understanding that he could and would justify the unstinted kindness and honor conferred upon him by submitting to the University of Copenhagen, and the scientific men associated with it, all the data that would be needed to satisfy them of the truth of his claims. Having decided in the first instance upon this mode of procedure Dr. Cook seems to think that the attacks upon him do not create a reason for changing his plans. He declines, therefore, to submit his proofs to a tribunal to be improvised in the United States. The Danes, meanwhile, are

AN OFFER OF FRIENDLY SERVICE.

DR. COOK: "Mr. Peary, may I offer my services as guide? I am a tourist conductor to the North Pole."

From *Jugend* (Munich).

not only preparing to go thoroughly into Dr. Cook's records and data but have also been making some inquiries in Greenland on their own account, by way of getting at certain relevant information. It may be safely predicted that when the European and American men of science get through with Dr. Cook's claim that will have settled the matter to the satisfaction of people of average sense and intelligence. Since, however, Dr. Cook's claims and statements are now seriously questioned by a good many men of scientific knowledge, it would seem to be well for Dr. Cook's reputation as a man of good taste and self-respect to expedite the examination of his records, and to discourage official and public honors until after the University of Copenhagen has pronounced its verdict.

Mr. Peary and His Attitude.

The work of Commander Peary has been carried on for many years in such a way as to add to our knowledge of the unexplored parts of the world in which we live; and by dint of persistence and the accumulated experience of a lifetime Peary has at last shown how to carry northern travel to the extreme point. His work as an explorer has been brilliant and successful, and to the minds of thoughtful people it loses nothing of its value whether or not it should turn out that Dr. Cook had actually been so fortunate as to have reached the Pole a year sooner. It is possible to understand the state of mind which has led Peary into the series of ill-advised utterances attributed to him by the newspapers. But none the less it is unfortunate for him that he has attached so much importance to the claim of Dr. Cook. There have been a good many recent attempts to reach the North Pole, any one of which might, under fortunate conditions, have proved successful. Contributing to the world's scientific knowledge is what is of importance, and that Peary has done. The mere question who arrived first at a certain point happens in this case to be of much less consequence. Commander Peary is entitled to all his laurels, quite regardless of the question whether Dr. Cook is an honest explorer or a vulgar hoax. Peary should leave Cook to fight his own battles for

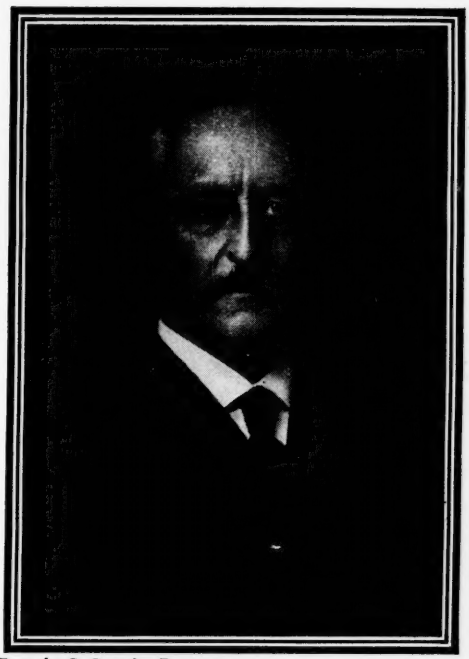
THE NEW COOK "PERSONALLY CONDUCTED" TOUR.

(The cartoonist of Paris *Figaro*, Albert Guillaume, suggests to Dr. Cook that after he has convinced the world that he really reached the North Pole he organize a series of regular excursions to the Farthest North.)

the confidence of the public, and try to accept a little more cheerfully the hearty acclaim that every one has been ready to bestow.

The Cook-Peary Controversy.

Both Dr. Cook and Commander Peary reached the United States on their return from the Arctic regions just as we were going to press with the last month's issue of this magazine. Up to that time the interest of the civilized world had centered about the achievement of reaching the Pole, and the descriptions (extraordinarily similar in general character) given by the two men themselves of the boreal regions. Commander Peary's reiterated assertion, however, that Dr. Cook had never reached the North Pole, his formal statement of what he regards as evidence of his contention, and the replies and arguments of Dr. Cook's friends soon shifted the interest and made the controversy between the two explorers the main fact of the news of October. Following up his assertion first made through the cables from Indian Harbor, Labrador, on September 6 that Dr. Cook never reached the highest north, Commander Peary, soon after his arrival in the United States, submitted to General Thomas Hubbard, a New York lawyer and president of the Peary Arctic Club, a full statement of the facts which, in his judgment, uphold his accusation against Dr. Cook. This statement was made public on October 13.



From the Co-Operative Press.

GENERAL THOMAS HUBBARD.

(The New York lawyer and capitalist and president of the Peary Arctic Club, who has been advising Commander Peary in the publication of his charges against Dr. Cook.)

HOW UNCLE SAM MIGHT USE THE NORTH POLE.

TAFT (the world pilot): "Now, boys, all together. The world's axis is ours. We can turn the old globe as we will."

From *Kladderadatsch* (Berlin).

The Peary Charges and "Proofs."

It consisted of the detailed story of Dr. Cook's two Eskimo companions, as reported by members of the Peary party, in which the natives are made to say that the Cook party went only "two sleeps" (two days' journey) north from Cape Hubbard, never leaving the land ice, and that they then returned with full sledges south and west over another route than that described by Dr. Cook. The story is accompanied by the comments of Commander Peary. Several days later there appeared in a New York newspaper a sworn statement from Edward N. Barrill, the guide who accompanied Dr. Cook on his expedition to Mount McKinley in the summer of 1906. In this narration Barrill declares that Dr. Cook never reached the top of Mount McKinley, but ordered him, Barrill, to falsify his daily record so as to make it appear that the summit had actually been attained.

It is on the evidence of the two Eskimos, with their direct statement about the North Pole expedition, and the declaration of Dr. Cook's Mount McKinley guide as contributory evidence of the explorer's "unreliable" character, that Peary bases his accusations.

Dr. Cook's Replies.

In reply Dr. Cook, disclaiming any enmity to Commander Peary, asserts that his Eskimo guides had been instructed by him not to reveal to Mr. Peary his movements north of Cape Hubbard, since he, Dr. Cook, knew of Peary's enmity to him, and desired, naturally enough, to make known to the world himself the news of his achievement. Regarding the doubts as to his ascent of Mount McKinley, Dr. Cook expresses surprise at the Barrill statement and insists that, in view of what he declares is the truth and the fact that up to the present time the guide has supported his claim, the present statement was obtained from Barrill by "undue influence." Perhaps the most valuable evidence in support of Dr. Cook's claim up to the time of our going to press was the testimony of Knud Rasmussen, the Danish Arctic scientist and leading authority on northern Greenland. This is found in a report sent from Julianstaab, Greenland, late in September, and received by his wife at Copenhagen on October 20. Rasmussen was the only white man who saw Dr. Cook start and the only man with a real knowledge of the Eskimo language (he is part Eskimo himself) who had been in actual contact with the natives in the region from which Dr. Cook took his guides. He declares his absolute faith in the explorer. He did not talk with the guides, but with many natives who knew them and their story. "Whenever Cook's statements are compared with the statements of his companions they appear to be quite truthful. . . . To sum up, the Eskimos believe that Cook reached the goal and that he, during the voyage, showed great nerve and energy."

Photograph by Paul Thompson, N. Y.

WILBUR WRIGHT AT GOVERNORS ISLAND.

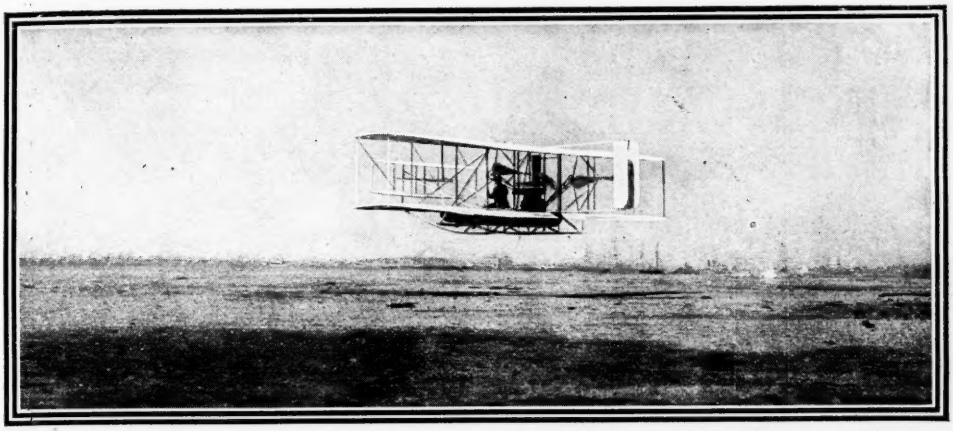
(Showing the genial half-smile of the modest aviator.)

Preparing the Cook Case.

Several expeditions also are under way to ascend Mount McKinley and confirm, if possible, Dr. Cook's claim. Apparently aroused by the persistency and gravity of the charges against him, Dr. Cook on October 18 announced that he would discontinue his lectures within a few days and devote himself to the preparation of the official statement of his case, which would go first to the University of Copenhagen and then be submitted to such a tribunal in the United States as would satisfy the scientists and the general public. Whether or not Dr. Cook actually attained the summit of Mount McKinley on his expedition in 1906, it should not be forgotten that the exploration of the Mount McKinley region by that expedition, which is a matter of scientifically recorded fact, showed Dr. Cook to be, beyond question, an intrepid traveler and explorer.

Wilbur Wright's New York Flight.

Wilbur Wright, who has not sought personal fame, bears his own recent accession of vast popularity with equanimity and without self-consciousness. Undoubtedly the most interesting event of the Hudson-Fulton celebration in New York was the magnificent flight of twenty miles accomplished by Wilbur Wright in his aeroplane on October 4. Starting from Governors Island, in New York Harbor, Mr. Wright steered a course up the Hudson River to Grant's Tomb, a distance of 10 miles, and circling over the great fleet of war vessels anchored in the river, returned safely to his starting point. The hundreds of jackies clustered on the battleships cheered lustily as the "man-bird" passed over them. Thousands of citizens who were so fortunate



Photograph by Brown Bros., N. Y.

WILBUR WRIGHT FLYING OVER THE PARADE GROUND ON GOVERNORS ISLAND NEW YORK.

as to see the flight watched the machine with intense interest, and the whistles of ferry-boats, factories, and tugs shrieked out their noisy homage to the "King of the Air,"—as Wright has been called. It was truly a triumphal flight and one of the finest yet made in America. The feat derived additional interest during the Hudson-Fulton celebration from the fact that the course taken was up the same historic river that had borne the tiny *Half Moon* on its voyage of discovery, and had also been the scene of the *Clermont's* more recent achievement. The entire distance of 20 miles was accomplished in about thirty-three minutes,—at an average speed of almost 43 miles an hour. On the afternoon of the day of this flight Mr. Wright's machine met with an accident to the motor, which put an end to his trials in New York for the time being. He immediately afterward transferred the scene of his operations to College Park, Maryland, where he was under contract to teach some officers of the Signal Corps how to operate the aeroplane he has sold to the Government. Here Mr. Wright had a very successful season, making on several days as many as five separate flights, both with and without his pupils. On October 9 he made another record by negotiating a closed course of 500 meters in 58 3-5 seconds, and he predicted a future speed for his aerial craft of from 60 to 70 miles an hour.

Lambert Circles the Eiffel Tower.

The great spread of interest in flying and flying machines is shown by the number of "aviation meets" springing up in various countries. At Blackpool and Doncaster, in England, at Berlin and Johannisthal, in Germany, and at Juvisy, in France, noted aviators have recently assembled and aerial feats have been accomplished which a few months before would have made records and astounded the world. During the Berlin aviation week Hubert Latham made a daring flight clear across Berlin, from the Tempelhofer Field, where he had been making flights, to the Johannisthal aviation meeting, a distance of about twelve miles, which he made in twenty-four minutes. It was in connection with the Juvisy meet that Count de Lambert made his sensational flight to Paris and around the Eiffel Tower, returning safely to the Juvisy field. Lambert, in a Wright aeroplane, started up from the grounds on the afternoon of October 18, presumably to make a circuit of the course. To the astonishment of the spectators, however, he cleared the bounds of the field and disappeared from view. To only a few persons had he confided his real purpose. Half an hour later the people of Paris were startled to see the birdlike machine soaring high up over the city, and before they had recovered from their astonishment Lambert had circled the Eiffel Tower and was well on his way back to Juvisy. The news of his feat had preceded him by telephone and he received an enthusiastic ovation. He had made the thirty-mile trip in fifty minutes. The Eiffel Tower is 984 feet high, and as Lambert claims to have circled 300 feet above it, he must have attained an approximate height of 1300 feet. Orville Wright, who was present at Juvisy at the time, called

Photograph by G. G. Bain, N. Y.
COUNT DE LAMBERT.

Lambert's exploit the finest aeroplane flight yet made. Wright himself at Potsdam on October 2 established a new record for height by rising steadily in his machine for fifteen minutes, attaining an estimated altitude of 1637 feet.

The Balloon Races.

The balloons have also had their innings during the past month. Half a dozen or more contestants started in the annual balloon races of the Aero Club of St. Louis. They made long and thrilling journeys and landed in widely separated States. The Lahm Cup for the longest flight made in a balloon under the auspices of the Aero Club was finally won by A. Holland Forbes, of New York, and Max Fleischman, of Cincinnati, whose balloon, the *New York,* landed in Richmond, Va., after a trip of 731¼ miles. In the international race for the Gordon Bennett trophy seventeen balloons started from Zurich, Switzerland, on October 3. Mr. Edgar W. Mix, of Ohio, the American entrant, won the prize, having traveled 650 miles and landed in Russian Poland on October 5. Le Blanc, of France, was awarded second prize.

Four Articles on Flying Machines.

This REVIEW has during the past two years published a number of articles chronicling the progress of aerial navigation. So marvelous has been the very recent advance in this field of human endeavor that we present in this issue four illustrated articles, by competent writers, dealing in an authoritative and comprehensive manner with flying and flying machines. Mr. Stanley Yale Beach, himself a builder of aeroplanes, tells "How an Aeroplane Is Built," explaining the various parts of the machine. Mr. J. Bernard Walker, who, as editor of the *Scientific American,* has studied the subject closely, contributes "The Aeroplane—A Retrospect and a Forecast," reviewing the interesting history of man's attempts to fly and suggesting the functions of the aeroplane of the future. The dirigible balloon,—the "lighter-than-air" type of flying machine and in a measure the rival of the aeroplane,—is explained very thoroughly by two recognized authorities on the subject, Messrs. T. R. MacMechen and Carl Dienstbach, while still another article gives an account of the sensations of flying.

Gaynor on the Pinnacle.

Judge William J. Gaynor has not borne the ordeal of publicity and controversy with anything like the steadiness of temper and general self-control that Dr. Cook has shown. Mr. Gaynor accepted the Tammany Hall nomination for Mayor at a time when the defeat of Tammany Hall was the one thing to be desired in the municipal affairs of the great city of New York. He expected to be treated with consideration through the campaign, and to be deferred to on all sides as a lifelong reformer and a man whose character and record would suffice as a guaranty of his loftiness of purpose in seeking the Mayoralty. Unfortunately for his pretensions, the situation did not justify his leaving the bench to enter municipal politics as a candidate for office. The real contest, as all well-informed people knew, was for the control of the Board of Estimate and Apportionment, which has everything to do with the raising and spending of the city's money. The Fusion ticket, headed by Mr. Otto T. Bannard, which Judge Gaynor went into the field to oppose, was made up of candidates selected for their especial fitness. For that reason, men claiming a record of disinterested public service, like Judge Gaynor, clearly owed it to themselves and their reputations to support the citizens' ticket as against the Tammany Hall ticket.

Photograph by Brown Bro., N. Y. Judge Gaynor.

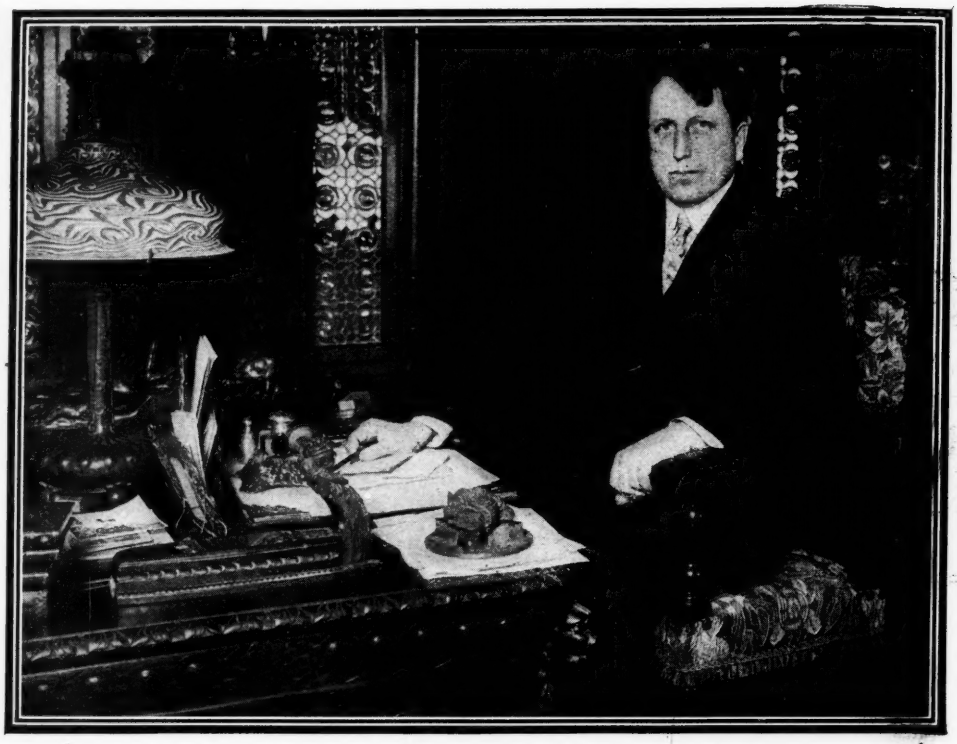
JUDGE GAYNOR ACCEPTING HIS NOMINATION FOR THE NEW YORK MAYORALTY.

The Price of a Nomination.

Any just reputation that Judge Gaynor had earned in the past for useful service to the community was precisely the measure of the price he paid to Tammany Hall for a nomination which,—if his personal prestige should lead to success at the polls,—would drag into power one of the most objectionable tickets ever offered to the community by this corrupt organization. Judge Gaynor has been known as a man of extreme, if not fanatical, zeal on behalf of certain public causes, and has long been regarded as a man who might make a very popular run for Mayor or Governor. But he understands the situation in New York thoroughly well; and he knows, as every one else does, that Tammany selected him for the sake of keeping its control upon the other offices. Tammany's hope was that Gaynor's popularity would sweep the whole ticket into power. In accepting the nomination under these circumstances Gaynor parts company with a reputation which he had been thought to value. He places himself in the same position, and therefore upon the same level, as his associates upon the Tammany ticket. He subjects himself to a review of his past career and an analysis of his mental and moral qualities that have not been complimentary and that have been met by him with volumes of rather irrelevant retort and personal attack upon those who have criticised him. He has had no apologies to make for his associates upon the ticket, and has put himself in a position which would tie him close to Murphy,—the Tammany boss,—in case of his election.

The Entrance of Hearst.

When in the early days of October the enthusiasm for the citizens' ticket had not warmed up much and the success of the Gaynor-Tammany ticket seemed altogether probable, a number of influential people having the welfare of the city at heart went to Mr. William R. Hearst and asked him to run at the head of a third ticket for the Mayoralty. The proposition was to call the Hearst movement the Civic Alliance, and to fill up the column on the official ballot paper under Hearst's name with the candidates who were running on the Fusion ticket. It was believed that a great many people would vote for a ticket headed by Hearst who would not vote for one headed by Mr. Bannard, who is a banker and a regular Republican. Mr. Hearst himself, with his newspapers, had reluctantly declined to support Gaynor on account of the association of Gaynor with Tammany Hall. On the other hand, Hearst did not feel that he could support Bannard, although he was ready enough to support all the rest of the



HON. WILLIAM RANDOLPH HEARST, IN HIS OFFICE.
(From his latest photograph.)

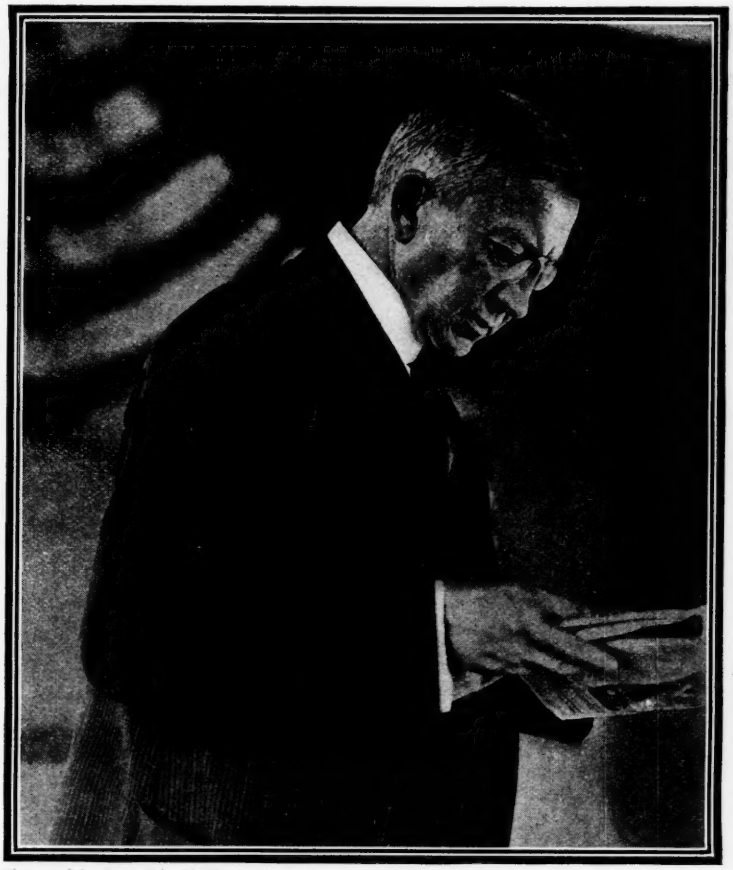
Fusion ticket. He finally yielded to persuasion, accepted an independent nomination, and appeared at a great mass-meeting in Carnegie Hall,—a meeting remarkable for its enthusiasm and for the people who had brought it about and occupied the platform.

A Remarkable Ovation.

It was presided over by Prof. Charles Sprague Smith, head of the People's Institute and for many years identified with movements for the educational and civic betterment of the community. The leading speaker was Mr. William M. Ivins, the Republican lawyer who four years ago was the Republican nominee in the three-cornered Mayoralty fight,—Hearst and McClellan being the other candidates. Ivins was sacrificed at that time by conservative voters who were afraid Hearst might be elected and who preferred to vote for McClellan and Tammany. Mr. Ivins is the head of the Charter Commission, has investigated the traction situation in New York, and is the best-informed man in the city upon all phases of municipal government. His abhorrence of Gaynor is without bounds, and the avowed reason for his support of Hearst is to make more sure the defeat of Tammany. Many clergymen and social reformers were among the sponsors for Mr. Hearst's candidacy this year, and were upon his platform. Entering the campaign with great reluctance Mr. Hearst warmed up to the situation from day to day with a growing prospect that he would poll a large vote. He has become a good speaker, and has found a new following.

Bannard and His Canvass.

Mr. Bannard, furthermore, has proved an excellent campaigner, showing a spirit of cheery good temper that contrasts agreeably with the irascibility of Judge Gaynor. Mr. Bannard is not merely a successful business man; he has been identified for more than thirty years with the work of the Charity Organization Society and with other phases of social and charitable work, and his knowledge of the conditions of life in New York is extensive. He has never been a seeker for office, but is



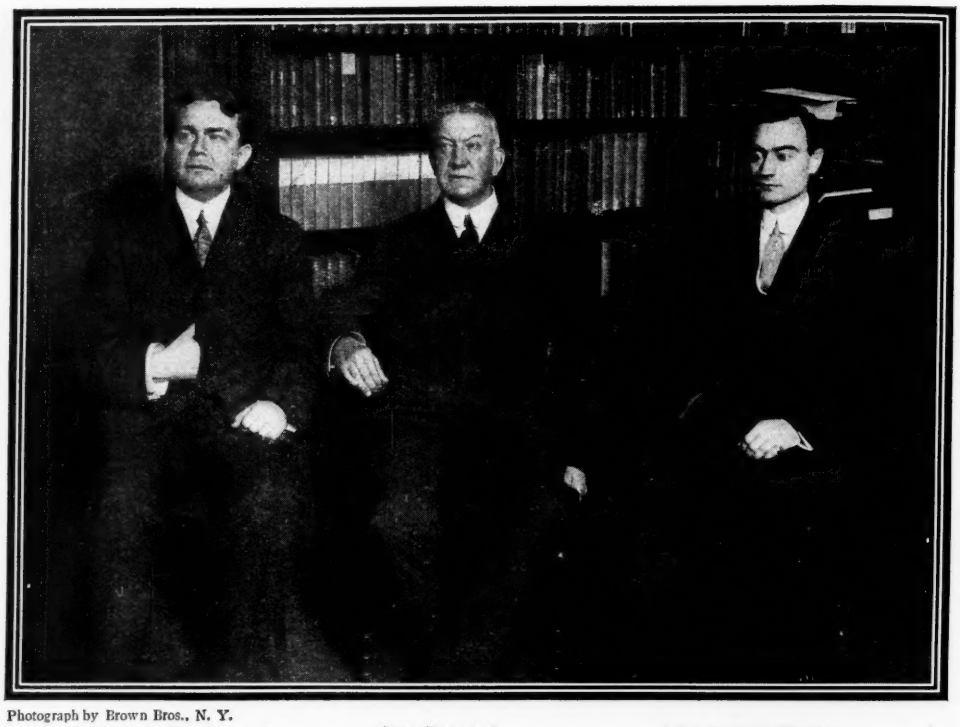
Photograph by G. G. Bain, N. Y.

MR. OTTO H. BANNARD, REPUBLICAN AND FUSION CANDIDATE FOR MAYOR.

a public-spirited citizen of highly honorable standing among business men, and especially fitted at the present time to perform the duties of Mayor. He would work in harmony with the other candidates on the ticket, and the success of the Fusion movement this year would give encouragement to the cause of sound and progressive government throughout the entire country. It would mean a real triumph for our popular institutions. And it seems assured.

Other Offices to Be Filled.

Next to the Mayor perhaps the most important office at the present time in the City of New York is that of the Comptroller. The Fusion candidate, Mr. Prendergast, of Brooklyn, has the confidence of good citizens of all parties and would administer the finances of the city with intelligence and thoroughness under conditions much less difficult than those that the present Comptroller, Mr. Metz, has had to meet, although in many respects Mr. Metz has filled the office with great credit. The candidate for the presidency of the Board of Aldermen, Mr. John Purroy Mitchel, is a young Democrat whom Mayor McClellan selected as a Commissioner of Accounts and whose good work has been like a beacon light in an administration that has averaged rather dark and gloomy. The Fusion candidate for the presidency of the Borough of Manhattan is Mr. George McAneny, whose name is known throughout the country for his long years of devoted work to improve political conditions. Years ago he was associated with the Hon. Carl Schurz in carrying on the work of the National Civil Service Reform League. He has been a director of the Bureau of Municipal Research and president of the City Club. He was in the forefront of the fight that resulted in the re-



Photograph by Brown Bros., N. Y.

William A. Prendergast. Otto Bannard. John Purroy Mitchel.

THE THREE LEADING CANDIDATES ON THE NEW YORK CITY FUSION TICKET.

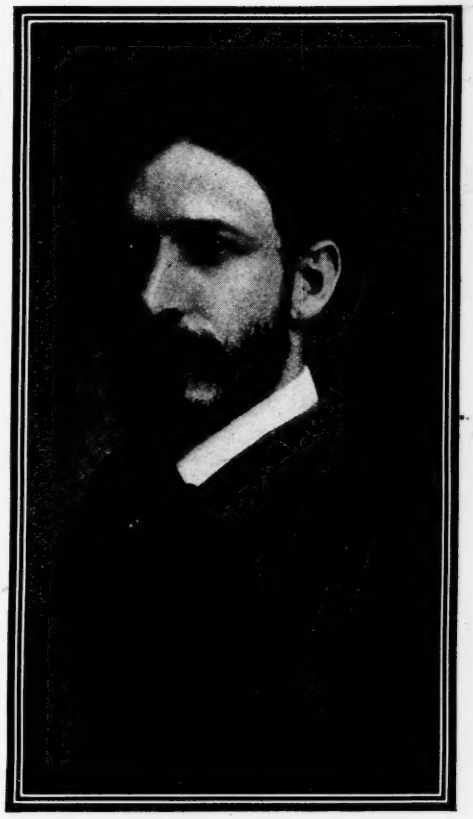
moval of the Tammany president of the Borough of Manhattan upon charges presented to Governor Hughes. Mr. McAneny is an independent Democrat who is enthusiastically supported for this office by the whole Republican organization, as well as by all citizen bodies and reform groups. Both Mr. Hearst and Mr. Bannard have said repeatedly in their campaign speeches that the election of the Mayor is not this year nearly so important as the election of Mr. Prendergast, Mr. Mitchel, Mr. McAneny, and the candidates for the presidency of the other boroughs, all of whom, together with the Mayor and Comptroller, make up the Board of Estimate and Apportionment. If the Fusion ticket should be elected the finances of New York would be well conducted for four years.

Experts in Municipal Government.

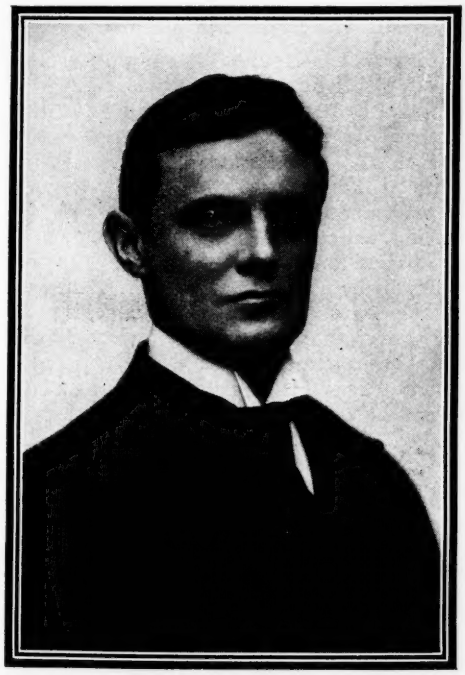
Elsewhere in this number we publish an article on the fundamental situation in New York, by Dr. Allen, of the Bureau of Municipal Research. This Bureau, supported by public-spirited citizens, has investigated conditions in New York until it knows the facts. Its members know more than anybody else knows about New York's financial condition and administration, about the organization of the departments, the making of the budget, and the wastes and leakages of the existing system. The Tammany campaign has been particularly bitter in its attacks upon the Bureau. This, however, is highly agreeable to the experts associated with Dr. Allen, Mr. Bruére, and Mr. Cleveland, because it is a tribute to their efficiency. As a matter of fact, the only thing that has redeemed the McClellan administration has been the great extent to which it has utilized the services of the Bureau. Mr. Metz, the Comptroller, has reorganized the accounting system of his great office under the guidance of the accounting experts of the Bureau, and has shown his good sense and courage in being willing to accept such valuable and disinterested aid. Mr. McClellan personally has been under the deepest obligations from time to time to the Bureau,—although Mr. McClellan is not precisely the kind of politician who frankly acknowledges the help of those who rescue him from the countless scrapes into which a certain indecision of character is always precipitating him.

Progress in Spite of All.

Tammany had the easy opportunity in this campaign to boast of the extent to which its officials had accepted and welcomed the co-operation of the Bureau of Municipal Research. A good deal could have been said quite justly for the Tammany department heads along that line. But nobody seems to have had sense enough to perceive and utilize the chance. The fact is that the forces of civilization are mightily at work in the great American metropolis. Progress is made even with Tammany in office. Tammany officials cannot wholly disregard the demands made by the growing intelligence of the community. The very fact that New York is progressing is what affords the opportunity for carrying out the many reforms and improved methods that are now intelligently demanded. It is because the schools are in a fairly good condition that they might be made so much better. It is because we have a good tenement-house law and the beginnings of a departmental administration of that law that the opportunity is so great for fine social results through the really well-developed work of an efficient tenement-house department. It is because New York has now fairly well paved streets and the survival of



MR. GEORGE M'ANENY.

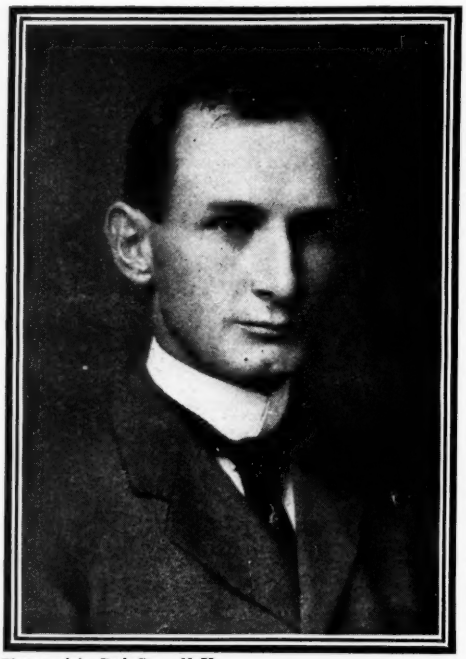


MR. CHARLES S. WHITMAN.
(The Fusion candidate for District Attorney.)

Waring's street-cleaning system that all such services as those pertaining to the streets could be made still better under a more businesslike direction of finances and work. It is because there is so much merit and vitality in the Department of Health that so much more could readily be accomplished toward the further lessening of tuberculosis and other ills. It is because New York has so remarkably fine a police service that it would seem feasible to correct certain minor evils that affect this service, chiefly through the corrupting influence of Tammany Hall. It is not a revolution that is demanded in the municipal work and conditions of New York but continued progress through a finer and better kind of administration, such as would surely show itself at once if the Fusion ticket were elected.

The Making of Leaders.

In the turbulent politics of New York City there is always opportunity for new leaders to come forward in American public life. They must



Photograph by Pach Bros., N. Y.

HON. HERBERT PARSONS.

(New York City's Republican leader and a rising man in the progressive wing of the Republican party.)

have courage, honesty, and a wide knowledge of human nature in all sorts of men. It was through this very testing and ordeal that Theodore Roosevelt made his way until he became Governor, Vice-President, and President. George B. McClellan had hoped that he might follow a similar path; and it is stated by his friends that he still thinks that a kindly fate, which has given him many plums thus far in spite of himself, may somehow make him the successor of Hughes at Albany and then the successor of Taft at Washington. The only plausible explanation for Gaynor's entering the municipal scramble and taking the Tammany nomination is the one advanced in private by many of his friends who say that he was looking forward to the next Democratic nomination for the Presidency. Mr. Hearst did not think that this was his year, and he was deeply averse to appearing as a candidate. But having been led forward he has become hopeful of election, and every one knows that it is the Presidency upon which Mr. Hearst and his friends have long fixed their gaze.

Mr. Jerome to Retire.

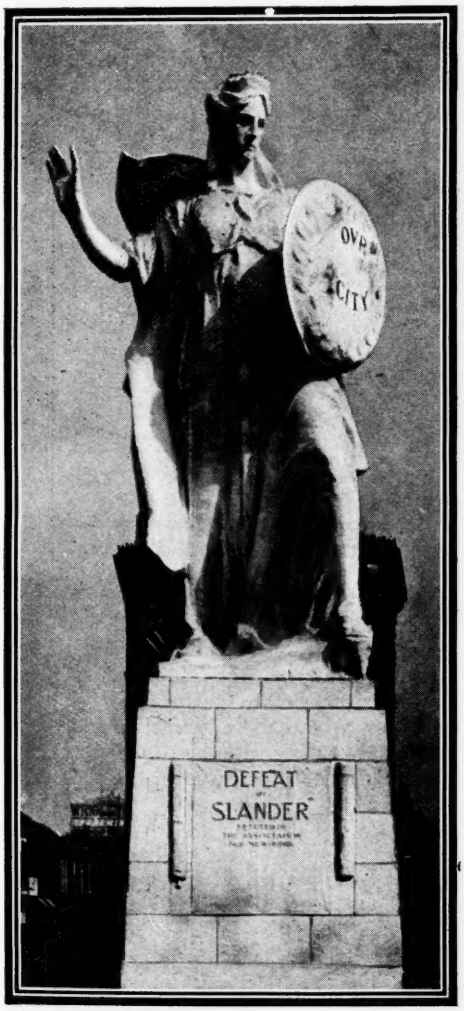
At one time Mr. William Travers Jerome, District Attorney of New York, seemed to have prospects of great political advancement. Mr. Jerome is completing eight years of service as prosecuting officer in the county of New York. It is a very difficult office, has great power and responsibility attached to it, and is constantly bringing its incumbent into national prominence. Mr. Jerome was not accepted by Fusionists or Tammany as a candidate this year, but he was nominated independently for his present office on petition signed by thousands of his friends. After the Fusionists, however, had nominated a brilliant and popular candidate in Judge Charles H. Whitman, who had been much spoken of for the Mayoralty, and when Tammany made a like brilliant and popular choice in naming Mr. George Gordon Battle, it seemed best to Mr. Jerome to withdraw from the race. Some things were expected of him which probably no man could have done. He has, upon the whole, filled the office of District Attorney with great credit.

Republican Leaders.

It is not only the Democrats who are training leaders in the school of New York City politics, but also the Republicans. Mr. Henry L. Stimson, who served under Roosevelt as United States District Attorney in New York, and who was one of those most prominently named to head the Fusion ticket, seems to be destined to a political career of great distinction. Mr. Herbert Parsons, who is a member of Congress and at the same time chairman of the New York County Republican Committee, is a politician who fights for his convictions with amazing skill, and who begins to count as a rising force in the affairs of the national party. Mr. Whitman has been serving as a municipal judge, is popular and right-minded, and if elected will probably make a great record as District Attorney. There is a great chance in New York City for young politicians of both parties and all parties who will refuse to be dominated by party machines, who will maintain their own freedom and independence and will work for their honest convictions. The great political leaders of the nation in the earlier period came from the rural districts, as a general rule. But the political contests nowadays that develop strong leaders are in the cities rather than in the country, and the municipal arena comes to be a training school for leadership on the national plane.

Political Statuary in New York.

A rather striking illustration of some of the startling contrasts presented by New York City politics and conditions of life which Dr. Allen depicts so vividly in the article already referred to is furnished by the unique method of "campaigning by statue unveiling" which has rather unexpectedly developed in the municipal campaign of this year. A group of alleged public-spirited gentlemen, presumably with their political affiliations rather closely connected with the existing régime in the greater city, who modestly conceal their identity under the impressive corporate name of the "Association for New York," were responsible during the first few days following the close of the Hudson-Fulton celebrations for the unveiling of a white plaster statue of a woman, heroic size, in one of the conspicuous squares of the center of the city. The wayfaring man may learn from the statue of the lady, the shield she bears in one hand, the several smug inscriptions, and the immaculate purity of her garb, that she was intended by her creators to stand for the purity of the American metropolis, which, in the belief of the "Association for New York," has been foully slandered by New York's many traducers and particularly by the Fusion and other anti-Tammany forces during the present campaign. This heroic exemplification of New York's purity,



"THE STATUE OF PURITY" IN LONGACRE SQUARE, NEW YORK CITY.

(One of the features of the present municipal campaign.)

Photograph by Brown Bros., N. Y.

THE MONUMENT TO GIOVANNI VERRAZANO IN BATTERY PARK, NEW YORK.

(Unveiled by the Italian societies of the greater city on October 6.)

MR. EDWIN HAWLEY, WHO HAS EFFECTED AN IMPORTANT RAILROAD COMBINATION.

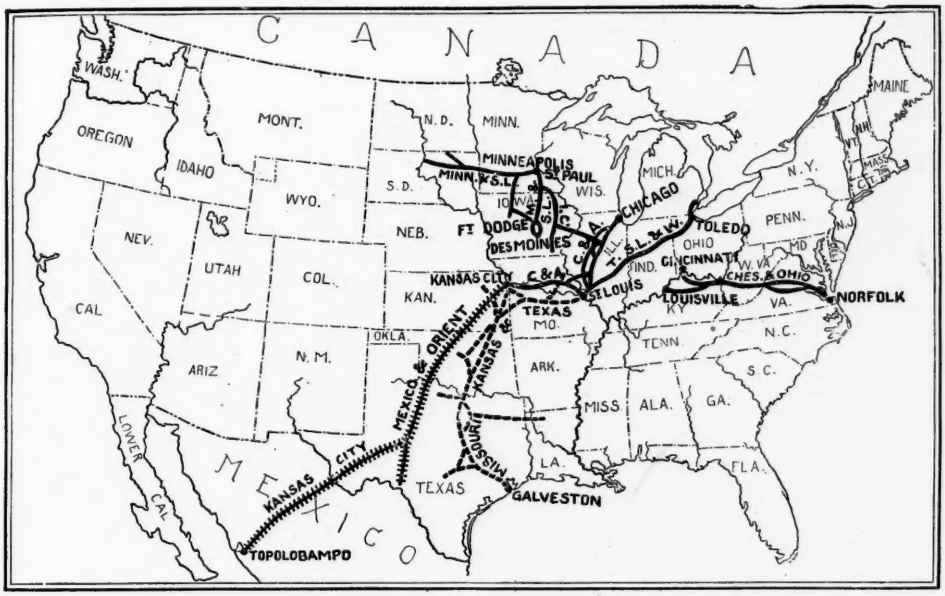
however, excited little but derision in the minds of New York citizens, and they were quite fully prepared to accept as a second exhibit in this novel method of campaigning the "reply" statue, which was unveiled several days later in the campaign "Exhibit Museum," conducted by the Committee of One Hundred, and which showed Lady New York as the victim of her real slanderer, the Tammany Tiger.

Honoring Verrazano.

In impressive contrast with these exhibitions of New York political art is the splendid artistic statue of Verrazano which was unveiled on October 6 in Battery Park, at the southern end of the city, by the Italian societies and residents of the metropolis. The monument is the work of Ettore Ximenes, director of fine arts in the Ministry of Education of Italy. Verrazano Day was celebrated by a parade of 25,000 Italian-Americans and by other exercises commemorating the achievement of Giovanni Verrazano, who in 1524 actually discovered the Hudson River, almost a century before the voyage of the great navigator whose more scientific and thorough study fully entitle him to the honor of having his name perpetuated by the noble stream.

A New Railroad Group.

A new great railroad group has appeared on the map, in alignment with the Harriman, the Morgan, the Hill, and the Gould systems. By the purchase last month of a controlling interest in the Missouri, Kansas & Texas Railroad Mr. Edwin Hawley has completed the ground-work of a system reaching from Newport News, on the Chesapeake, to Le Beau, South Dakota, and to Kansas City, and running south to Galveston on the Gulf.

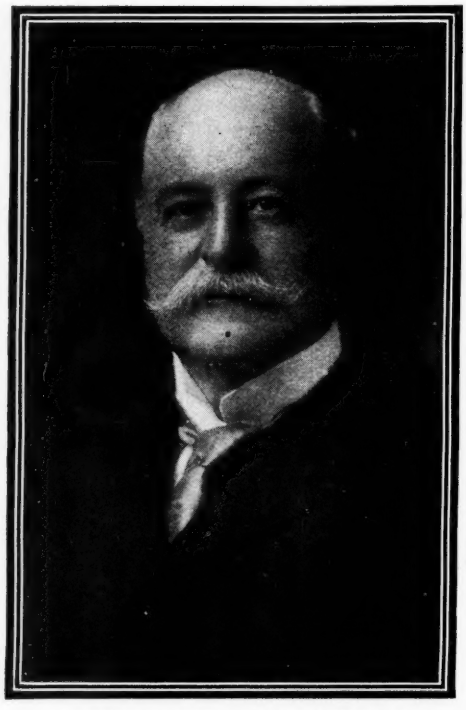


MAP OF THE HAWLEY RAILROAD LINES.

The most important item in this congeries of relatively small roads is the Chesapeake & Ohio, reaching from Newport News to Cincinnati, an excellent road physically and financially, through many years prepared by the conservative control of the Pennsylvania to operate with admirable efficiency and economy. Since Mr. Hawley purchased the Chesapeake & Ohio last winter the price of its stock has advanced to 89, as against 22 in 1907. After the Chesapeake & Ohio, the Chicago & Alton is the most important component part of the new Hawley system. Besides the three mentioned, the new group contains the Minneapolis & St. Louis, the Iowa Central, and three smaller roads, the entire collection aggregating 8400 miles, and tapping nearly half the best agricultural and industrial area of the United States. Further, a traffic arrangement has been made between the Hawley group and the Kansas City, Mexico & Orient, now building across Texas and Mexico to the Pacific, which will give the new system the shortest route from the Pacific to the Atlantic seaboard by about 500 miles. The total capitalization of the new system is $618,000,000. Much more must be done and great sums of money spent to bring the eight lines, as a whole, to the necessary efficiency as a transcontinental trunk line, but Mr. Hawley is regarded as a man equal to this task.

Mr. Hawley's Career.

Mr. Edwin Hawley is a quiet, effective man of fifty-nine years, who has a reputation of doing things and, even then, of not talking of them. He came down to New York from Chatham, up the Hudson, when he was sixteen years old, and started on his career as messenger boy for the Erie Railroad, at four dollars a week. He advanced slowly from one post to another, saving a little money and, even then, buying railroad stocks, until at twenty-one he became contracting agent for a California fast freight line. In that capacity he attracted the notice of the late Collis P. Huntington, who made him general eastern agent of the Southern Pacific, and later its assistant traffic manager. When Mr. Huntington died, Edwin Hawley appeared in some sort of control of the Southern Pacific, and he did not stand in Mr. Harriman's way when the latter bought the Huntington road for the Union Pacific. But Mr. Hawley was not kept among Mr. Harriman's strong men; nor later, when Mr. Hawley became a large stockholder in the Chicago & Alton, did Mr. Harriman include him in the directorate of that road. Thereupon, Mr. Hawley wrested the control of the Alton from Mr. Harriman,—perhaps the most important defeat suffered by that great organizer. Edwin Hawley is now frequently being compared to Harri-



GOVERNOR DRAPER, OF MASSACHUSETTS.
(Candidate for re-election.)

man. Like the latter, he has come into national prominence comparatively late in life; he has some of the same unerring judgment of the possibilities in apparently unimportant railroads, and the brilliancy to capture them when he wants them; he has, like Harriman, an intimate understanding of the stock market, and the qualities to inspire a loyal following. It remains to be seen if he can do enormous constructive work of the sort that Harrman did in making a first-class trunk line out of a fourth-rate railroad like the Union Pacific,—by the expenditure of hundreds of millions of dollars years before others saw the profit in such an investment.

A Few State Elections.

The only State elections of importance this fall are those in Massachusetts, Rhode Island, Virginia, and Maryland. Governor Draper of Massachusetts and Governor Pothier of Rhode Island, Republicans, have both been renominated. Their Democratic opponents are, respectively, James H. Vahey and Olney Arnold, each of whom, it chances, led his party to defeat last year; but both Massachusetts and Rhode Island have at times elected Democratic Governors, while remaining strongly Republican on national issues. Such an outcome this year would not be as surprising as the election of a Republican Governor in Virginia, where the Republicans have nominated the Hon. W. P. Kent to lead the forlorn hope. An uncertain factor in the Virginia campaign is the prohibition issue. Maryland is to choose a legislature and a State Comptroller and vote on the disfranchisement amendment to which we alluded in these pages last month. The legislatures to be chosen in Massachusetts, Rhode Island, Virginia, Maryland, and Kentucky will have an opportunity to vote next year on the income-tax amendment to the Constitution of the United States. The Democrats of Massachusetts and the Republicans of Maryland are committed in their State platforms to the passage of the amendment. The Republicans of Rhode Island, on the other hand, follow the example set by the Republicans of Massachusetts in recommending non-partisan action on the question.

Affairs of Our Cities.

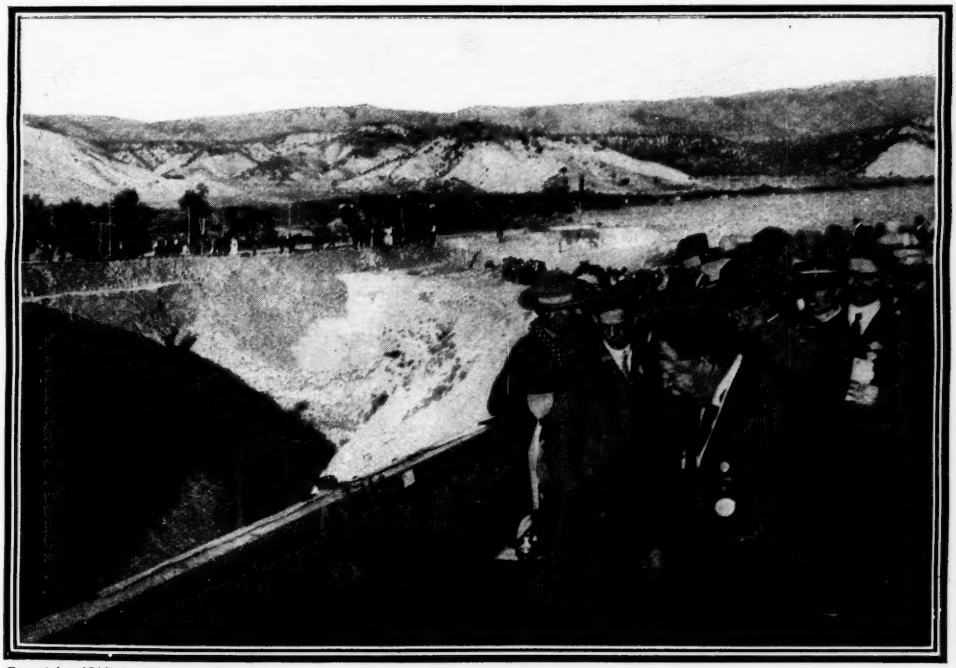
While the New York City election engages national attention, there are municipal campaigns in progress in various cities, most of which have only a local interest. The Cleveland Mayoralty contest, in which Mayor Tom L. Johnson figures for the fifth time as a candidate, is an exception. The whole country is interested in Mr. Johnson's plucky and determined fight for re-election, after the defeat of his three-cent fare enterprise. All the other Ohio cities are to elect Mayors on November 2. Mayor Brand Whitlock, of Toledo, is also a candidate for re-election. The populous cities of New York State and New Jersey hold municipal elections on the same date, but their campaigns and candidates are attracting little attention. Municipal officers for the chief cities of Massachusetts are to be chosen next month at separate elections. The city of St. Louis, early in October, celebrated the one-hundredth anniversary of the municipality. Five years ago St. Louis astonished the world by holding a brilliantly successful world's fair, and since that date the city has made continuous progress. Not only has there been a steady growth in population, but a civic spirit has been awakened that promises much for the future. The chief feature of the centennial celebration last month was a long-distance balloon race, to which reference is made in our paragraphs on aviation.

The President Nearing Home.

Mr. Taft has been persevering faithfully upon his long and toilsome pilgrimage of many thousand miles; and now in a few days, if all goes well, he will be at Washington again. He was entitled to a vacation after the adjournment of the tariff session in August. Many useful results, doubtless, will have accrued from his speech-making journey across the Northwest to Puget Sound, down through California to the Mexican border, across Texas, down the Mississippi River to the waterways convention, and up to Washington by way of some of the important centers of Southern life and influence. But the President is also needed at Washington. On the first Monday of next month Congress will be in session, and the President's message will be in order. Presidents and members of the cabinet travel much more freely nowadays than in the earlier periods of our Government; and while there are a number of good reasons for this change, there may also be some disadvantages resulting from long absences of many of the executive chiefs from their official desks.

The Vacant Chinese Post.

Without any disrespect to those in high authority, it may be assumed that if they had all been in Washington in late September and early October the post of Minister to China would not now be vacant. The President was on the Pacific Coast, Mr. Knox, Secretary of State, was at his summer home in Pennsylvania. Mr. Charles R. Crane, newly appointed Minister to China, was in Washington seeking to obtain his final instructions before setting sail from San Francisco for the mission to which he had been designated. As he was about to sail from San Francisco the State Department telegraphed him to come to Washington. He met Mr. Knox there and was invited to resign. Mr. Taft used the telegraph wires to confirm Mr. Knox's position. It will be remembered that President Taft had attached the greatest importance to the selection of a man for the Chinese post. When he found Mr. Crane he deemed himself highly fortunate in his choice. Mr. Crane was made the recipient of many honors, which he accepted without ostentation at the President's express request. It is generally not a good plan for a man



PRESIDENT TAFT OPENING THE GREAT GUNNISON TUNNEL AT MONTROSE, COLORADO, SEPTEMBER 23.

(For a description of this enterprise see this REVIEW for August, 1909.)

appointed to a diplomatic post to accept public attentions before he starts or to make any allusion, either in public speech or in conversation with newspaper men, to the objects or plans of his government with respect to the mission to which he has been appointed. But Mr. Crane, far from being warned against such things, felt that he had been encouraged in the opposite course. It is said that a Chicago newspaper declared that the State Department was making a study of the recent treaty between Japan and China relating to Manchuria. The New York papers had said this a good many days previously and everybody at Washington and elsewhere seems to have been making free with the same topic. It is further said that the Chicago correspondent had derived some notion of the importance of this question from a brief conversation with Mr. Crane. Just the character and extent of Mr. Crane's indiscretion, as seen by the State Department, have not been made clear to the public. It is all extremely unfortunate and almost without precedent in our diplomatic history. Nothing could have been more blameless or discreet than Mr. Crane's pleasant but brief remarks at the dinner of the Asiatic Society, given in New York in his honor on September 20. Yet his speech on that occasion was cited by the newspapers as one of the State Department's reasons for his summary dismissal.

Photograph by Paul Thompson, N. Y.

MISS VIRGILIA BOGUE, QUEEN OF THE PORTOLA FESTIVAL IN SAN FRANCISCO.

(Miss Bogue, who is prominent in California society and the author of two novels, was selected as queen from a list of the most beautiful young women of the State.)

San Francisco Honors Portola.

The month of October witnessed the celebrations by the metropolitan cities of both our Atlantic and Pacific seaboards of noteworthy historical anniversaries. Scarcely had New York rested from the ceremonies commemorating the three hundredth anniversary of the exploration of the Hudson River by the great navigator, and the first centenary of Fulton's steamboat triumph, before San Francisco began to rejoice with parade, pomp, and pageant over her complete reconstruction after the terrible disaster of earthquake and fire that overtook her three years ago. Her rejoicing took the form also of celebrating the one hundred and fortieth anniversary of the discovery of the Golden Gate by Don Gaspar de Portola in the year 1769. During the last days of October in the year 1769 this Spanish navigator sailed into San Francisco harbor, and his vigor and enterprise soon brought him the honor of being the first Governor of California. Spanish sovereignty over the western half of what is now the continental territory of the United States existed for a century and a half. It was not, however, until the middle of the eighteenth century that a revival of material prosperity in Spain itself, restoring her again to a place among the great powers of Europe, gave impulse to effective Spanish colonization in what are now the Western and Pacific States of the Union.

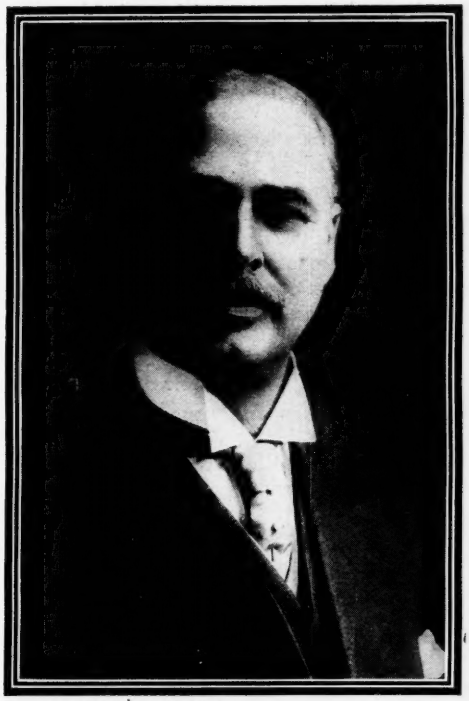
Spanish Influence in Our Great West.

The expansion which started with the Portola expedition from the "vice-royalty of Mexico" first brought Spain into close connection with the main current of United States history. For more than half a century thereafter Spain and her dependency,—Mexico,—figured prominently in the history and development of our great West. The influence of Spanish thought, language, and customs is still strong in our Pacific cities, and it seems singularly appropriate that the Californian metropolis in making merry over her complete rehabilitation after the calamity of 1906 should do honor to the sturdy old Spanish

explorer who became her first Governor,—Don Gaspar de Portola. With our friends the Mexicans we have had political and geographical differences more than once in the past, which were very bitter. It is particularly gratifying that the last step in the formal reconciliation of the two governments and peoples should have taken place at the completion of President Taft's memorable tour through what was once a portion of Spain's American Empire, and while the city that stands where Portola landed in 1769 is doing honor to the memory of the Spanish discoverer.

The Taft-Diaz Meeting.

Mexican interest in the meeting between Presidents Taft and Diaz last month was very great. Coming straight from the only New Mexican point in his itinerary, Albuquerque, President Taft on the morning of October 16 arrived at El Paso, Texas, and proceeded to the international frontier. The ceremonies attendant upon his long-expected meeting with President Diaz, of Mexico, were appropriate and indicated the cordiality of the present day relations between the two governments and peoples. The venerable Mexican President was awaiting at one side of the international bridge over the Rio Grande, and his impressively elegant carriage of state was greeted with hearty applause as it crossed the line from Mexican territory into the strip of land known as El Chamizal, the ownership of which is still in dispute between the United States and Mexico. It was the first time the Mexican President had ever been outside of the limits of his own country while President, and to make this trip to foreign soil he had to secure permission from the Mexican Congress. The aged General Diaz was received with sincere cordiality by Mr. Taft upon the American side, and then the President of the United States paid his return call. Mr. Taft's momentary excursion across the border was the first that a President of the United States has ever made over our land frontiers. The meeting between the two executives was private, except for the presence of their staffs and official retinue. The meeting and ceremonies at El Paso cannot fail to make a deep impression upon the Mexican people of the vigor and ability of the aged President Diaz and to aid the campaign he is conducting for the election of his candidate, Señor Corral, to the Vice-Presidency at the general election which will be held next year.



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HON. GEORGE R. COLTON.

(The new Governor of Porto Rico.)

Other Latin-American News.

As for the rest of Latin America, the principal events of interest to the rest of the world reported from the southern continent and the islands of the Caribbean last month were an eight-day session of the Cuban Congress, of which the only noteworthy accomplishment was the appropriation of $100,000 for the relief of recent hurricane sufferers in the western provinces, a new and at this writing apparently serious revolution against President Zelaya, of Nicaragua, the accession to office of Col. G. R. Colton as Governor of Porto Rico to succeed Regis H. Post, and the gratifying success of the Ecuadorian Exposition now in full swing at Quito.

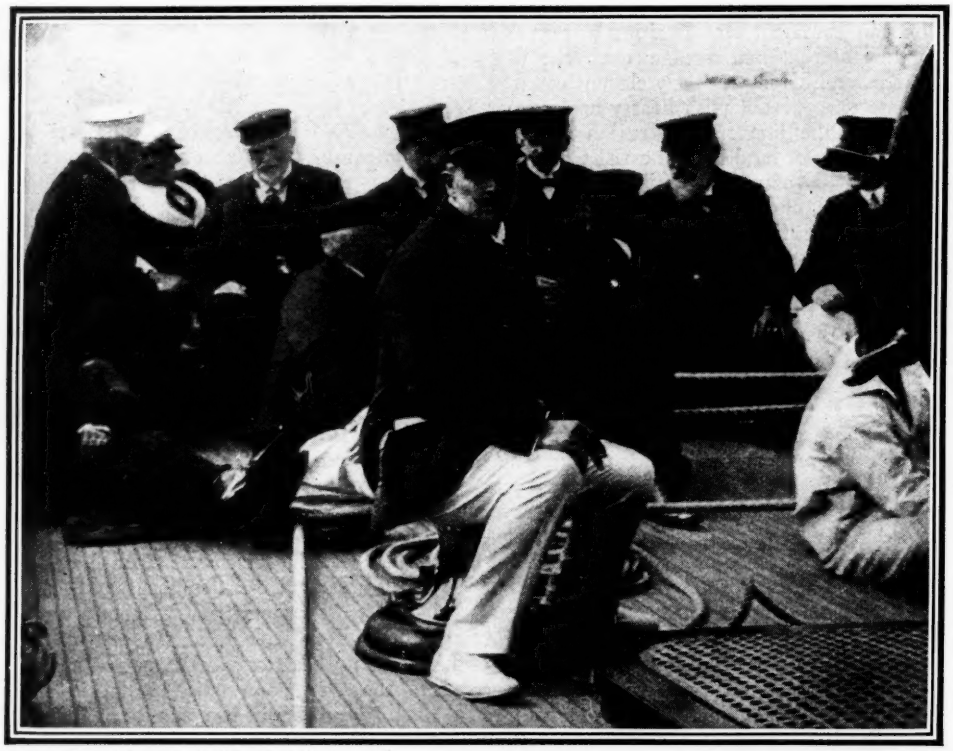
Germany, the United States,—and England.

In the welcome accorded by the New York populace to the sailors from visiting warships at the Hudson-Fulton celebrations last month there was no heartier note than that accorded to the Germans. His Majesty Kaiser Wilhelm II. had sent some of the really fine ships of his great navy, under command of Admiral von Köster, one of the most eminent

of his sea-fighters, to participate in the ceremonies. The good feeling shown was not merely on the part of our citizens of German birth but from native Americans as well. During the fêtes it was officially reported to the foreign fleets anchored in the Hudson that a son had been born to the German Crown Prince, and immediately all the warships in the river welcomed the royal birth with bunting and cannon. Only a few hours after the close of the celebrations the dispatches told us of the "tumultuous enthusiasm" of the German Emperor over the flight of Orville Wright in his flying machine at Berlin on October 15. The German monarch amazed the aviator with his knowledge of aeroplanes, and informed Mr. Wright that "after to-day's events the flying machine will have a different future as regards the German army." The press of the Fatherland, as well as of Great Britain, continues to discuss Anglo-German rivalry. British public men gave out more serious warnings last month as to the unpreparedness of Great Britain when it was announced that Germany had launched two "Super-Dreadnoughts," vessels exceeding in tonnage and offensive power anything in the British navy. In connection with this German-English "scare" we commend to our readers the dignified and restrained, yet frank and noble sentiments of the German professor Dr. Schulze-Gaevernitz which appears in the article on page 602 this month.

The British Budget and the Lords.

English political leaders are still speculating as to the fate of Mr. Lloyd-George's budget in the House of Lords, and as to what course the Liberal administration will take in case of a rejection by the Peers of this epoch-making financial measure. A Parliamentary recess of one week, beginning October 11, was brought about, it was declared, through the influence of King Edward, who summoned to Balmoral for conference most of the Liberal and Conservative leaders. While the definite conclusions of this conference were not published to the world last month, it is quite certain at the time of our going to press that the desires of the upper house have all along been for a flat rejection of the budget,



Photograph by Underwood & Underwood, N. Y

A NEW PICTURE OF KAISER WILHELM ON HIS YACHT, THE "HOHENZOLLERN."

a course from which the Peers have been deterred only by their fear of the result of an appeal to the country. Such an appeal, more than one Liberal leader has pointed out, would not merely decide the fate of the Lib-

MR. ASQUITH, THE BRITISH PREMIER, ADDRESSING THE HOUSE OF COMMONS ON THE SUBJECT OF THE BUDGET.

(From a sketch by the artist of the London *Daily Chronicle*, which is said to have been highly pleasing to Mr. Asquith himself.)

erals' financial measure; it would undoubtedly be a popular verdict, in all probability an unfavorable one, on the usefulness of the Peers themselves. Speeches by Premier Asquith and the Conservative leader, Mr. Arthur Balfour, during late September indicated a decided drift in British politics toward conducting the next general election campaign on purely tariff lines. Thanks to the efforts of Mr. Balfour and Mr. Joseph Chamberlain, it seems as though protection for the first time in many years would be the prime issue in a British general election.

Spain's Costly Triumphs in Africa.

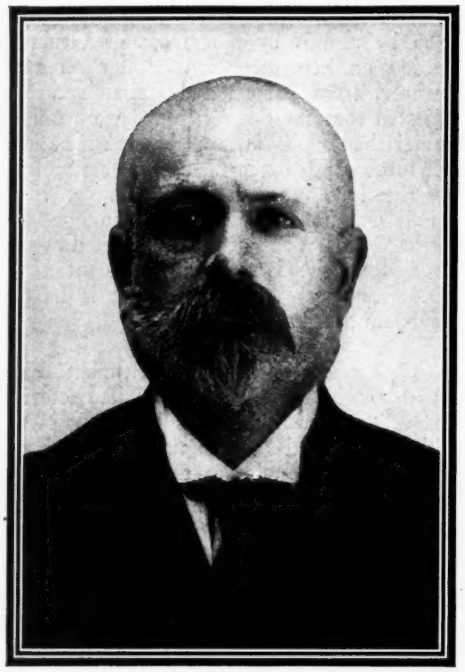
The forward movement of the Spanish forces in Morocco,—increased during August and September to more than 50,000 men,—began early in September. The Spaniards attacked the Riffian Moors all along the line, and the first reports, via Spanish sources, told of several decisive victories in the neighborhood of Melilla. Two strongly fortified Moorish posts,—Zeluan and Mount Gurugu,—were taken by assault by the troops of General Marina on September 27. Later reports, however, from French and Italian sources, indicated that the Spanish losses were much greater than supposed, and that the situation in Morocco up to the middle of last month was a serious one and increasing in gravity. A holy war is being preached throughout all northern Africa, and despite undoubted Spanish victories it is becoming evident that an African war on a large scale is facing the Spanish monarchy.

The Execution of Ferrer.

The Madrid Government celebrated the news of its victories over the Moors by doing away with the martial law administration of all Spanish provinces, or, as the dispatches put it, restoring the constitutional guarantees in all provinces except Gerona and Barcelona, where, during the past summer, it will be remembered, serious rioting occurred upon the calling out of the first troops for Morocco. Relentless prosecution of the instigators of these riots (described in detail in this REVIEW for September) culminated in the execution, on October 13, of Prof. Francisco Ferrer, a well-known Spanish educator of radical tendencies. Ferrer, it was claimed by the government, was the instigator and director of the Barcelona riots. He himself, while admitting his radical opinions, denied any connection whatsoever with the uprising. Ferrer was a man of education and influence, founder of the Escuela Moderna (Modern School) in Barcelona. He had long been suspected of revolutionary activities, and several years ago he was tried for attempting to assassinate King Alfonso, but was acquitted. The trial of Ferrer was in secret. The accused man was not permitted to hear the direct charges against him nor to face his accusers, nor was he allowed to speak in his own defense.

The Effect on Europe.

The decree of the court-martial was carried out in spite of the protests and petitions by sympathizers not only in Spain but in France and Italy. Such names as those of Anatole France and Camille Flammarion in France, Gerhard Hauptmann and Ernst Haeckel in Germany, Maurice Maeterlinck in Belgium and the late Cesare Lombroso in Italy appeared on the protests. The Spanish Government insists that his connection with revolutionary movements had been proved, but his counsel



PROF. FRANCISCO FERRER.

(The Spanish educator and radical agitator, who was executed for treason at Barcelona on October 13.)

and friends contend that Ferrer was the victim of "clerical hatred." The news of his execution was the signal for general rioting throughout Europe. In London, Paris, Rome, and Vienna the police had great difficulty in restraining demonstrators and preventing violence. Interpellations were made concerning the execution in the British, French, and Austrian Parliaments, and in Italy Ferrer's fate was, curiously enough, popularly attributed to the influence of Czar Nicholas, of Russia. The Muscovite monarch, then on his way to visit King Victor Emmanuel, was compelled on this account to enter Italy in secret. When the Spanish Cortes met on October 15 it expressed loyalty to the government and the throne. Several deputies, however, made speeches condemning the government for its action in the Ferrer matter, and one of them declared openly that "this execution was an egregious political blunder." "The innocence or guilt of the man has nothing to do with the case. The object of his removal was to help restore internal peace in Spain, but to-day Ferrer's influence is much stronger in Spain and throughout Europe than it ever was while he lived."

Hopeful News from Russia.

In spite of the rather unfavorable reports as to the progress of the Russification of Finland and the results of the notorious "Agram process" in Austria-Hungary, the general character of the news from eastern Europe during the last few weeks has been rather better and more hopeful than for some time past. After a bitterly contested trial, fourteen members of the Russian Constitutional Democratic party, charged with "belonging to a non-legalized political organization," were acquitted, late in September, the result being to establish the legal existence of the party to which they belong. It is reported on good authority that conditions in Russian Poland have improved of late, and that martial law has been abolished in almost all the Polish "governments." Other Russian news in refreshing contrast to the much-repeated story of oppression and revolution, of knout, bombs, exile, and cholera, is the report of the grain crop of the empire for the present year. This is the most abundant for a generation, and, according to the Russian correspondent of the London *Standard,* this news, taken in conjunction with the report of the unusual Russian cotton crop, gives us assurance that "more Russians will be clothed and fed in 1910, and these more satisfactorily, than for many years past."

Austro-Hungarian Topics.

The Agram trial, which lasted seven months, resulted in the conviction of thirty persons for "high treason." The charge was participation in a movement for the union of Croatia, Slavonia, and Bosnia with Servia. Agram is the chief city of Croatia and the center of the region in which the Hungarian Government is attempting to "Magyarize" its Slavonic subjects. The conduct of the trial has been severely criticised as being prosecuted by the government for obviously political reasons and as being (we quote from one of the Croatian newspapers) "grossly unfair and in defiance of all provisions of the law." More gratifying in the cause of justice is the reported elevation to the rank of princess of the Countess Sophie Chotek, the Bohemian morganatic wife of Archduke Franz Ferdinand, heir apparent to the Austro-Hungarian throne. The Archduke's marriage to the non-royal Bohemian lady, it will be remembered, so displeased his royal uncle that the heir was forced to renounce for his children all claims to the throne. The

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BARON SHIBUSAWA, THE J. P. MORGAN OF JAPAN.

(Who is now on a tour of the United States at the head of the Japanese Commercial Commission.)

elevation of the countess to the rank of princess indicates that the aged Emperor has become reconciled and that when Franz Ferdinand ascends the throne a way may be found to clothe his consort with really imperial dignity.

The Japanese "Commercial Commission."

As with increasing frequency parties of distinguished Americans visit Japan and societies or commissions of eminent Japanese make tours of this country it is being realized by the American people that the economic future of the two nations, as far as the Orient is concerned, is absolutely dependent upon the continuance of their present cordial relations. This feeling has been made evident very significantly and impressively by the intelligent welcome given the Japanese Commercial Commission, which for the past few weeks has been traveling throughout the United States. The chairman is Baron Eiichi Shibusawa, who is one of the most eminent of modern Japanese captains of industry, a banker, transportation expert, and a man of patriotism and large vision. The object of this commission, which has not been sent by the government, but by merchants of Japan, is to study American business and industrial methods. The commission is purchasing a large variety of manufactured articles which have heretofore not found a market in the Orient. The commission, furthermore, has purchased the newest machinery used in lumber, mining, and milling industries, and also devices for food preservation, and many of the labor-saving devices used in banking and commercial offices. Many American inventions will thus be brought for the first time to the notice of Japanese merchants. It is to be expected that an appreciable increase in trade between the two countries will follow the return of the commission to Japan.

DR. YASNYA UCHIDA, WHO WILL SUCCEED BARON TAKAHIRA AT WASHINGTON.

(Last month it was announced definitely that Dr. Uchida, who has been for some years Japanese Minister to Austria-Hungary, would succeed Baron Takahira as Japanese Ambassador to the United States.)

Photograph by Underwood & Underwood, N. Y.

THE PRESENT RULERS OF CHINA.

(Prince Chun, the present Regent of the Chinese Empire. The young Emperor stands at his left. The baby on the Regent's lap is brother of the Emperor.)

China and Japan in Manchuria.

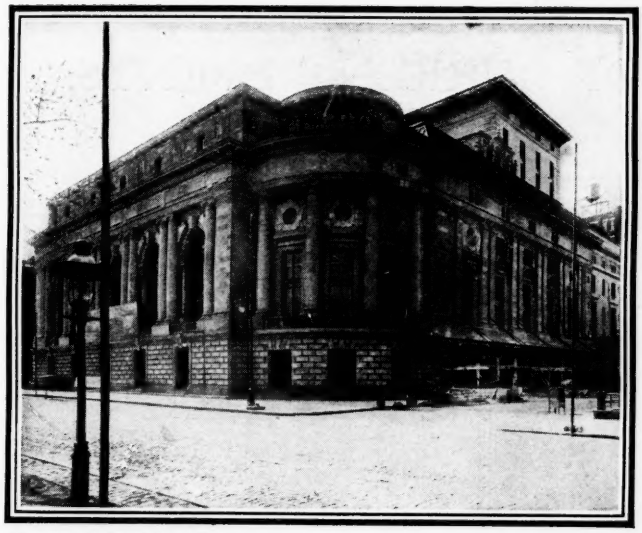
The net result of the recent agreement between China and Japan regarding the Antung-Mukden Railroad (the terms of which were set forth in these pages last month) is that Manchuria, while nominally remaining an integral part of the Chinese Empire, will hereafter be controlled, if not actually administered, by the government at Tokio. By what is known as the Peking protocol of 1905 China formally gave up her right to construct any railway in the neighborhood of the south Manchurian line. Now, by the agreement already referred to, she virtually gives up further rights to build any railroad at all in Manchuria. When the lines now projected are completed Japan will have two railways stretching into the heart of Manchuria, the one connecting Port Arthur and Dalny with Mukden and the other traversing Korea. The latter is little more now than a Japanese province and China is apparently becoming more and more willing to agree with Japanese demands. The Land of the Rising Sun is gradually coming to stand before the world as the champion and leader of the entire Far East. Meanwhile China progresses slowly. On the thirteenth day of last month, in accordance with the imperial edict of a year ago, "despotic government in China terminates forever." The first imperial edict was issued on that day, calling into being the "legislatures of the self-governing provinces throughout the empire." China, if all goes as planned, will have a constitution within the twelvemonth.

Shakespeare's Globe Playhouse.

A new phase of the everlasting Shakespeare discussion came out last month at the unveiling, on October 8, of the memorial tablet in London on the building (Barclay's,—the old Thrale's,—brewery) now occupying the supposed site of Shakespeare's famous old Globe Playhouse. The recently announced result of the researches of Prof. C. W. Wallace, of the University of Nebraska, discloses the apparent fact that Shakespeare's playhouse was actually in another part of the same street and not at the brewery in question. It is surprising how much discussion there has been by scholars and in the press of the world on this apparently trivial matter. It all only goes to show how Shakespeare's life and name have become the common property of the world's daily thought. This discussion comes rather significantly at the time when the the-

IS THERE ANYTHING BEHIND THE PRESENT CORDIALITY BETWEEN THE UNITED STATES AND JAPAN?

(The artist of Tokio *Puck* wonders whether behind the screen made up of the flags of the two nations Uncle Sam and Miss Japan are concocting any scheme regarding the future of China.)



Photograph by Brown Bros., N. Y.

NEW YORK'S INDEPENDENT THEATER.

(The New Theater, recently erected at Sixty-second street and Central Park West, New York City, which will be open to the public on the 8th of the present month.)

atrical situation in our own country, despite all the charges that are hurled against it of commercialism and low standards, has now approached sufficiently near to the situation in England during Shakespeare's time to permit of there being established in the American metropolis a really independent theater. The much-heralded New Theater in upper New York City, which begins its work of lifting our drama to loftier ideals on the eighth day of the present month, is neither an endowed nor a subsidized theater. It has been established by a group of wealthy men who have invested their money with no other purpose in view than to provide a playhouse where "superior art and plays of literary excellence" are to be presented regardless of the returns at the box-office.

The New Theater in New York.

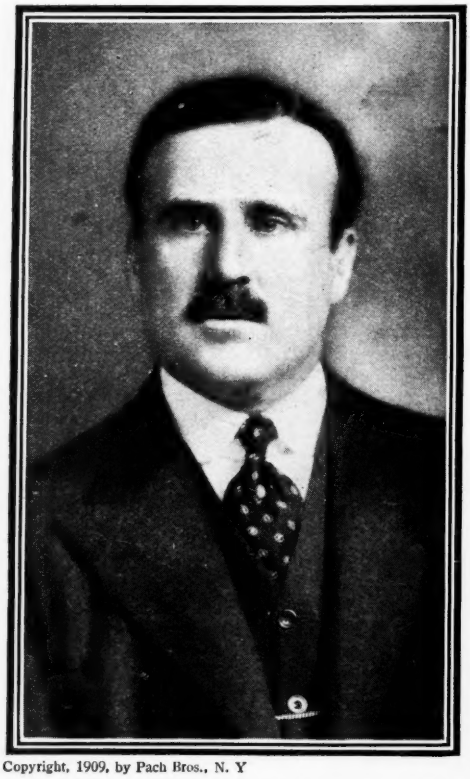
This enterprise is not, however, the management informs us, "to be the toy of the rich." It is hoped, "in truth, to make this institution as distinctly democratic and civic as the Comédie Française." The répertoire is not to be made up of so-called "classical" works, or "advanced," "faddish," or "literary" plays. In short, the New Theater is "not to be a school for the select few, wherein a dull or tedious play of merit will be kept upon the stage for the purpose of instructing its patrons, but a playhouse for the public at large." Whether or not in the selection of plays these claims and intentions will be borne out remains to be seen. It is significant and gratifying, however, to realize that the American theater is on the point of realizing its responsibilities and of becoming the ally rather than the enemy of education, of art, and of morals. It is, as the editor of the *Dial* so aptly puts it, an indication that the public is beginning to realize "the elementary propositions that the theater may be made a worthy educational agency, and that as such it should no more be expected to pay its own way than the college, the church, the public library, or the art museum." A number of the best, most scholarly representatives of the American stage will appear at the New Theater. Light opera will also be given.

Death of Lombroso.

For three decades the name of Cesare Lombroso has been famous throughout the scientific world as that of an original and keen thinker in the philosophy of crime and its treatment and causes. Although at first encountering much opposition, the theories of this eminent Italian alienist and anthropologist have been finally accepted by scientists as establishing certain principles which have radically altered the old-time conception of the criminal. His two most famous works are "The Criminal" and "The Man of Genius." His theory of crime as set forth in the first of these works is, briefly, to the effect that criminals are born, not made. Criminal instincts were not implanted by surroundings and environment, he held; they were caused by a hereditary taint. Therefore of what use was it to imprison the thief and the murderer? Rather, they should be treated as diseased persons, being victims of a strange mental illness, over which they had no control. In the second work, "The Man of Genius," Lombroso endeavored to prove that all geniuses are more or less acute epileptics. Professor Lombroso died at Turin on October 19,—within a few days of his seventy-third birthday.

RECORD OF CURRENT EVENTS.

(From September 21 to October 20, 1909.)



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LEE M'CLUNG, THE NEW TREASURER OF THE UNITED STATES.

(Mr. McClung resigns the treasurership of Yale University to take the Washington post.)

POLITICS AND GOVERNMENT—AMERICAN.

September 21.—President Taft speaks in Denver in defense of the corporation tax.

September 23.—President Taft appoints Lee McClung, treasurer of Yale University, to be United States Treasurer, succeeding Charles H. Treat....New York City Republicans nominate Otto T. Bannard for Mayor, William A. Prendergast for Comptroller, and John Purroy Mitchel for President of the Board of Aldermen (see page 594).

September 24.—The new United States Tariff Board holds its first meeting at the Treasury Department, Washington.

September 25.—President Taft announces that Chief Forester Gifford Pinchot will remain in the Government service.

September 30.—President Taft, speaking at the Seattle Exposition, advocates ship subsidies. ....Massachusetts Democrats nominate James H. Vahey for Governor....New York City Democrats nominate Justice William J. Gaynor for Mayor.

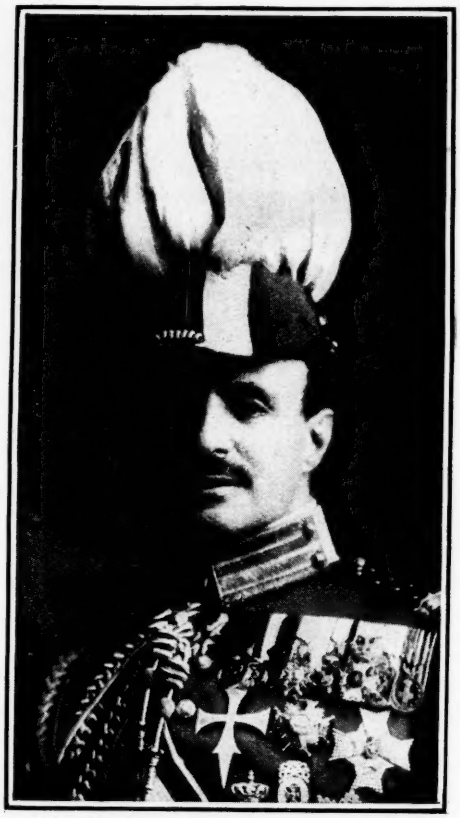
October 2.—Massachusetts Republicans renominate Governor Draper.

October 5.—A special committee from the larger post-offices of the United States is appointed to investigate the money-order system. ....The Democratic convention of New York County nominates George Gordon Battle for District-Attorney.

October 6.—William R. Hearst is nominated for Mayor of New York City.

October 7.—Rhode Island Democrats nominate Olney Arnold for Governor.

October 9.—District-Attorney Jerome, of New



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THE MARQUIS DE VILLALOBAR.

(The new Spanish Minister at Washington.)

Photograph by Waldon Fawcett, Washington.

THE UNITED STATES ARMY'S FIRST AEROPLANE SQUAD.

(Photograph taken at the new United States Government Aviation Field, College Park, Maryland.)

York, withdraws from the contest for re-election.

October 11.—The United States Supreme Court meets for the term of 1909-10.

October 12.—Charles R. Crane, recently appointed Minister to China by President Taft, resigns upon the demand of Secretary Knox.

October 13.—Rhode Island Republicans renominate Governor Aram J. Pothier.

POLITICS AND GOVERNMENT—FOREIGN.

September 21.—The Australian Minister of Defense introduces the Commonwealth Defense bill....The Colombian Congress meets at Bogota.

September 22.—A. J. Balfour, the British Unionist leader, comes out as a strong champion of protection.

September 24.—The National Defense bill passes both houses of the Danish Parliament.

September 28.—At the reopening of the Hungarian Parliament the Premier, Dr. Wekerle, announces the resignation of his cabinet.

September 29.—Alderman Sir John Knill is elected Lord Mayor of London.

October 2.—By imperial order, Batoum is abolished as a military port of Russia.

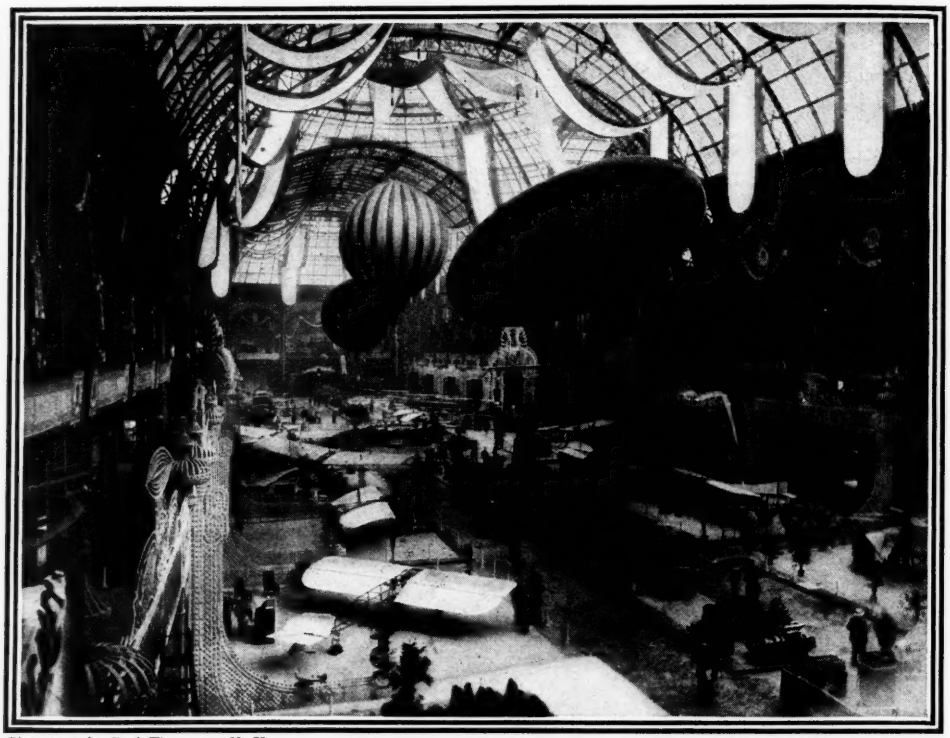
October 5.—Venezuela is reported in a condition of political unrest, many prominent citizens having been arrested.

October 8.—Winston Churchill, president of the Board of Trade, announces to the British House of Commons that the government will make no overtures to the House of Lords, and that no amendment to the Finance bill will be accepted.

October 11.—Three army reform bills are introduced in the Greek Chamber of Deputies.... King Edward, of England, returns to London to confer with political leaders in the hope of avoiding a constitutional crisis.

October 13.—Professor Ferrer, convicted of revolutionary activity, is executed at Barcelona, Spain,—the execution causes great excitement among Socialists in Europe....Juan J. Estrada has himself elected provisional president of Nicaragua....A Chinese imperial edict recognizes the provincial assemblies, members of which will be chosen to form the Imperial Assembly, which will draw up the constitution.

October 15.—The opening of the Spanish Cortes is marked by a fight between Conservatives and Republicans in the Chamber of Deputies, occasioned by the execution of Ferrer.... There are strikes and riots at Naples, Pisa, Florence, and Rome in sympathy with the Spanish revolutionists....The Greek Chamber of Depu-



Photograph by Paul Thompson, N. Y.

THE AERONAUTIC EXHIBITION AT PARIS LAST MONTH.

ties votes the bills abolishing the right of the royal princes to hold military commands.

INTERNATIONAL RELATIONS.

September 21.—Morocco refuses Spain's demand to withdraw the note asking intervention of the powers....The Moors lose 400 men in actions with the Spanish troops.

September 24.—Venezuela replies to Great Britain that no change will be made in the 30 per cent. additional duty on goods imported from the West Indies.

September 26.—It is announced at Washington that a monument commemorating the founding of the International Postal Union will be unveiled at Zurich, Switzerland....The Bureau of Naturalization, at Washington, decides that Turks are not eligible for American citizenship.

September 28.—The third International Shipping Conference is opened at Brussels.

September 30.—The International Conference of maritime law, sitting at Brussels, completes the draft of a convention covering collisions and salvage at sea.

October 3.—A British syndicate and the Ottoman Bank accept the Turkish Government's conditions for a loan of $35,000,000.

October 7.—The Russian Foreign Minister announces that the Harbin Tax dispute with the local German Consul has been settled.

October 8.—A dispatch from Constantinople says that the government will reject all foreign claims for losses in the Adana massacres.... The diplomatic corps at Tangier refuses to intervene in the case of Spanish action in Morocco.

October 9.—The International Peace Bureau at Brussels adopts a resolution that the governments of the world establish a general fund for relief in great disasters.

October 11.—Prince Ito assures the United States Government that Japan will maintain the policy of the "open door" in Manchuria.

October 16.—President Taft, of the United States, and President Diaz, of Mexico, meet at El Paso, Texas, and Ciudad Juarez, Mexico.

October 19.—Nicaragua pays the first instalment of $50,000 on the Emory claim.

OTHER OCCURRENCES OF THE MONTH.

September 21.—A hurricane sweeps the Gulf coast, causing a property loss of a million dollars in New Orleans.

September 22.—Prof. Edwin Clark Sanford is elected president of Clark College, Worcester, Mass....Captain Ferber, the French army officer, is killed while testing an aeroplane near Boulogne....The centennary of the birth of Lord Tennyson is commemorated in England.

September 23.—President Taft opens the great Gunnison irrigation tunnel in Colorado.

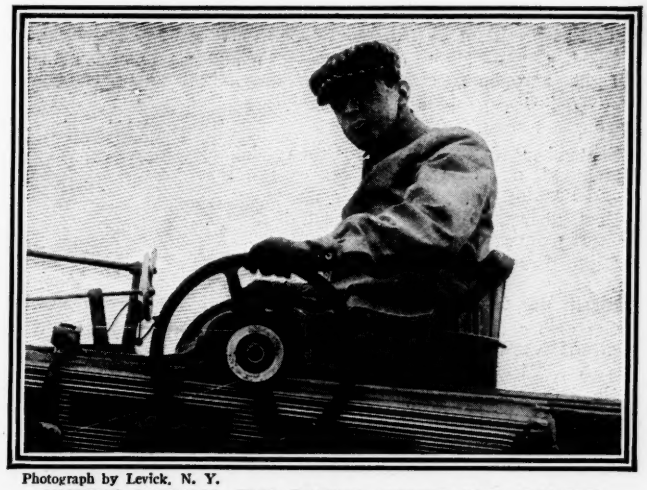
September 24.—The British and German fleets

of warship arrive at New York to participate in the Hudson-Fulton celebration. ....The International Aeronautic Congress favors navigation rules similar to those used in sea travel.

September 25.—Four French officers are killed by the bursting of the dirigible *La République* at a height of 500 feet....The Hudson-Fulton celebration begins at New York.

September 26.—Thirty balloons start from Paris in the long-distance contest of the French Aero Club.

September 27.—Hubert Latham makes a flight across Berlin to Johannisthal....The cornerstone of the Hudson memorial monument is laid by Governor Hughes on Spuyten Duyvil Hill, New York City.... The Interstate Palisade Park, on the Hudson River, is dedicated to public use.



Photograph by Levick, N. Y.

HUBERT LATHAM, THE DARING MONOPLANE AVIATOR.

September 28.—Rougier, Bleriot, and Latham make aeroplane flights at Berlin.

September 29.—President Taft arrives in Seattle to visit the exposition.

September 30.—H. M. S. *Neptune*, the eighth *Dreadnought*, with a displacement of 20,000 tons, is launched at Portsmouth....Orville Wright ascends 700 feet in his aeroplane at Potsdam....The price of September wheat on the Chicago Board of Trade is advanced 14 cents....The *Mauretania* lowers the time between Ireland and America by forty-four minutes.

October 1.—Twenty-eight balloons start from Zurich in the international balloon race....M. Rougier covers 80.6 miles in the long-distance competition for aeroplanes at Berlin....Dr. James B. Angell retires from the presidency of the University of Michigan....The Cleveland Railway Company accepts the city's offer to settle the street-railway question.

October 2.—The Kalvan Railroad, the first to be constructed solely by the Chinese, is opened to traffic.

October 3.—Seventeen balloons leave Zurich in the contest for the Gordon Bennett Cup and are driven in the direction of Russia....Hubert Latham attains a height of 580 feet in his aeroplane at Johannisthal....St. Louis begins the centennial celebration.

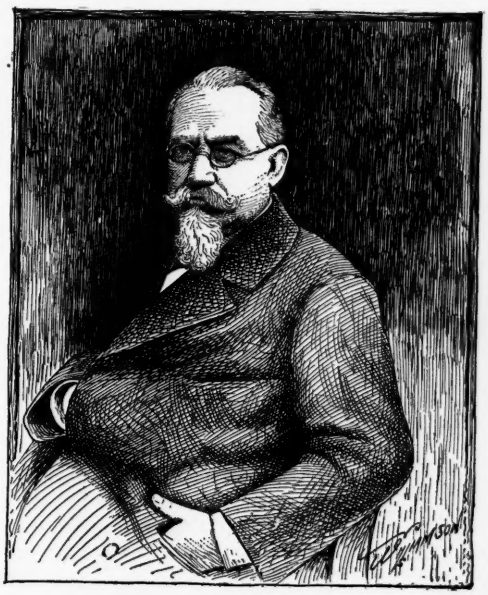
October 4.—The Cunard liner *Lusitania* completes the record run from New York in 4 days, 15 hours, and 52 minutes....Eight balloons start in a distance and time contest from St. Louis....Wilbur Wright makes an aeroplane flight from Governors Island up the Hudson as far as Grant's Tomb and back (see page 551).

October 5.—Many miners lose their lives in a mine explosion near Nanaimo, B. C....President Taft visits San Francisco.

October 6.—A monument to Verrazano, the Italian discoverer, who is held to have been the first white man to see New York Bay, is unveiled in Battery Park, New York City....Abbot Lawrence Lowell is inaugurated president of Harvard University.

October 9.—Wilbur Wright breaks the world's aeroplane speed record in a flight at College Park, Md.

October 12.—The United States Comptroller of the Currency closes the First National Bank, of Mineral Point, Wis., on account of a shortage amounting to $210,000.



THE LATE CESARE LOMBROSO.

(The Italian criminologist—see page 539.)

October 14.—Dr. Ernest Fox Nichols is installed as president of Dartmouth College.

October 18.—Count de Lambert, using a Wright aeroplane, circles above the Eiffel Tower, Paris, at a height of 1300 feet.

OBITUARY.

September 21.—Ex-Congressman Thomas Hammond, one of the founders of the Hammond Packing Company, 66.

September 22.—Robert Hoe, head of the noted firm of printing press manufacturers, 70.

September 24.—Rev. John L. Withrow, D. D., for many years pastor of the Park Street Church, Boston, 72.

September 25.—Ex-Governor Charles James Bell, of Vermont, 64....Archbishop Roerdan, primate of the Danish church.

September 26.—Rear-Admiral Charles J. Barclay, U. S. N., retired, torpedo and ordnance expert, 66.

September 29.—Ex-Congressman William R. Morrison, of Illinois, for many years a Democratic leader and a veteran of the Mexican and Civil wars, 84....Ex-Governor Miles B. McSweeney, of South Carolina, 54....William H. Palmer, owner of coasting steamers, 50.

September 30.—Dr. Anton Dohrn, founder and director of the biological station at Naples, Italy, 69....Gen. Eliphalet Whittlesey, secretary of the Board of Indian Commissioners, 88.... Frederick Russell Burton, an authority on Indian music, 48....Dr. George Edward Post, head of the medical college in Beirut, Syria, 71. ....Dr. Xenophon Christmas Scott, a noted surgeon and oculist, of Cleveland, 68.

October 1.—Rev. Ignatius Renaud, S. J., a prominent Catholic educator, 70....George W. Moore, a pioneer American minstrel, 84.

October 2.—Rear-Admiral Christopher J. Cleborne, U. S. N., retired, 71.

October 3.—Albert Pulitzer, formerly a New York newspaper publisher, 58.

October 4.—William Watson, the chairman of the Cunard Steamship Company, 66....Edmond Kelly, lawyer and author, 58....Dr. David H. Cochran, former president of the Brooklyn Polytechnic Institute, 81....Chang-Chih-Tung, grand councillor of China.

October 5.—John R. O'Donnell, news editor of the New York *Herald*, 55....Prof. Washington Irving Stringham, acting president of the University of California, 61.

October 6.—Ex-Congressman Lewis E. Payson, of Illinois, 68....Dudley Buck, the organist and composer, 70....Capt. John Joshua Nathaniel Webber, executive officer of the ironclad *Monitor* during the fight with the *Merrimac* in 1862, 80.

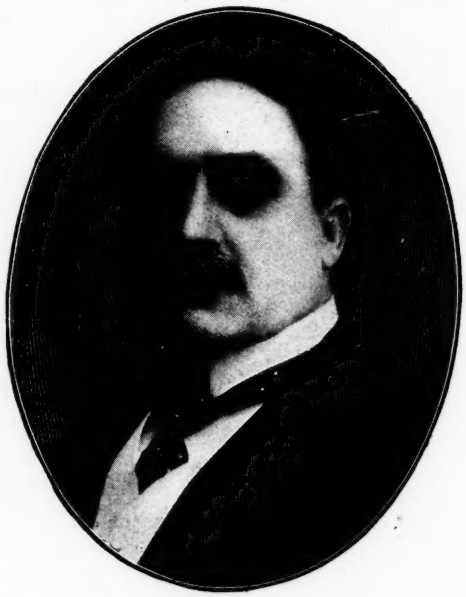
October 7.—Associate Justice Robert Roberts Bishop, of the Superior Court of Massachusetts, 75....William T. Pipes, attorney-general of Nova Scotia, 59....Mrs. Ettie Henderson, actress and playwright, 74.

October 8.—Naphtali Herz Imber, the Yiddish poet, 55....Robert Lyon Rogers, for forty-two years United States Commissioner for Maryland, 83.

October 10.—Brig.-Gen. Amos S. Kimball, U. S. A., retired, 69....Dr. John P. Reynolds, for twenty years a professor in the Harvard Medical School, 83.

October 13.—Major-Gen. Alfred E. Bates, U. S. A., retired, 69....George A. Edes, a veteran newspaper publisher and editor, of California, 69....Rev. Albert A. Bennett, D. D., senior Baptist missionary in Japan, 60.

October 14.—Rt. Hon. Gerald FitzGibbon, Lord Justice of Appeal in Ireland since 1878,



THE LATE WILLIAM I. BUCHANAN.

(Mr. Buchanan was one of the most efficient of American diplomats of the present generation. His services to this country included directorships in the Corn Palace Exposition, in 1882, at the World's Fair in Chicago, in 1893, and the Pan-American Exposition at Buffalo in 1901, as well as diplomatic missions to the Argentine Republic, as boundary arbitrator between Chile and Argentina, as delegate to two Pan-American conferences, as American Minister to Panama, as special commissioner to Venezuela, and as special agent to the Hague Tribunal in the Venezuela arbitration case.)

72....Rear-Admiral Robert W. Milligan, U. S. N., retired, 70....John P. Poe, formerly attorney-general, of Maryland, 73.

October 15.—Brig.-Gen. Richard C. Drum, U. S. A., retired, 84....Ex-Senator William Lindsay, of Kentucky, 74....Ex-Congressman Henry R. Harris, of Georgia, 84.

October 16.—Judge William I. Buchanan, formerly American Minister to Panama, 56.... Hon. J. H. Hofmeyr, member of the executive council, of Cape Colony, 64....Col. Smith S. Leach, Corps of Engineers, U. S. A., 58.

October 18.—Francis Lathrop, the painter, 60.

October 19.—Cesare Lombroso, the Italian criminologist, 73.

October 20.—Benjamin F. Barnes, Postmaster of Washington, D. C., 41.

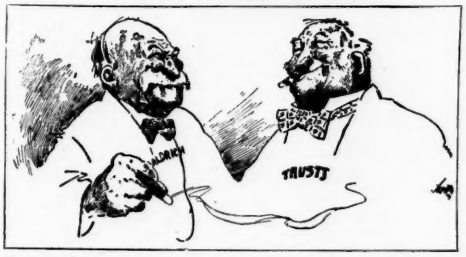
CURRENT TOPICS IN CARICATURE

"BRINGING THEM TOGETHER."

(A significant feature of the President's Western trip.)
From the *Times-Star* (Cincinnati).

"INTERNATIONAL AMENITIES."

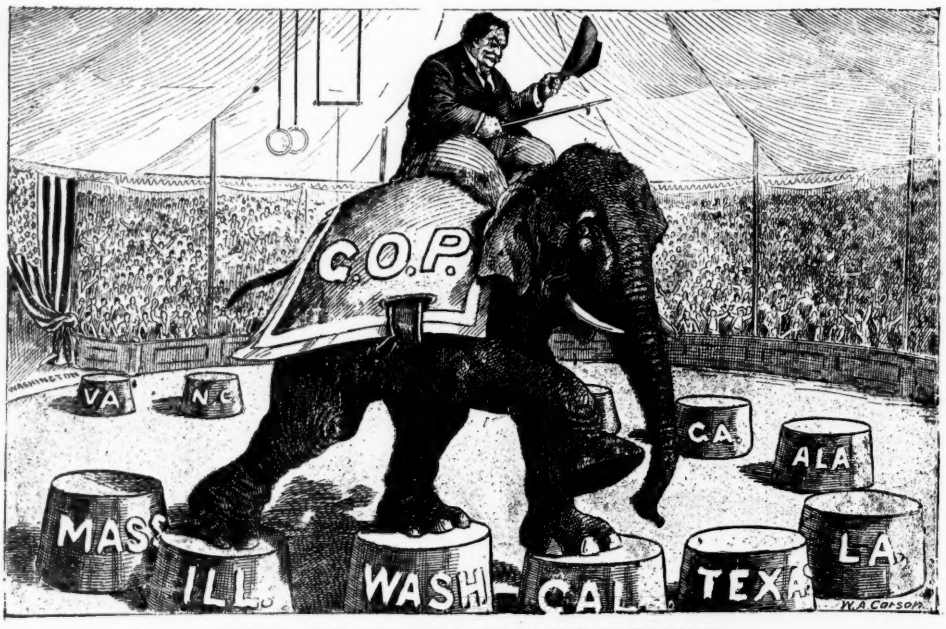
(President Taft's meeting with President Diaz, of Mexico.)
From the *Herald* (New York).



"SENATOR, DID YOU SEE WHAT TAFT SAID ABOUT YOUR BEING A FRIEND OF THE PEOPLE?"
From the *Plain Dealer* (Cleveland).

THE GAME OF FOLLOW THE LEADER.

("The good citizen must make himself a good loser. He must play the game. He is in popular government and he has to take what popular government gives him until by his influence with the people who control he can lead them in the direction which he would, and if they do not go in that direction he has to follow them."—*President Taft at San Francisco, October 5.*)
From the *Traveler* (Boston).



KEEPING THE REPUBLICAN ELEPHANT IN TRAINING.

(President Taft making the circuit of the States and meeting with great ovations.)

From the *Saturday Globe* (Utica).

The above cartoon suggests that President Taft's trip through the country will serve to strengthen the Republican party in various States. The President has not confined his speeches to politics, however, but has on occasions "sermonized" on other topics. He is thus shown in the cartoons on the lower part of this page as occupying a pulpit and preaching peace

THE BALLINGER-PINCHOT CONTROVERSY.

The pulpit and the pew.
From the *Herald* (Boston).

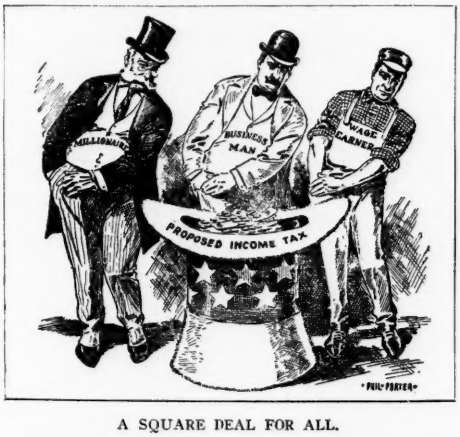
"Conservation" of the Cabinet.
From the *Journal* (Minneapolis).

"IF IT WERE NOT FOR THE PASSENGERS HE MIGHT BOOST IT OVER."

From the *Daily News* (Chicago).

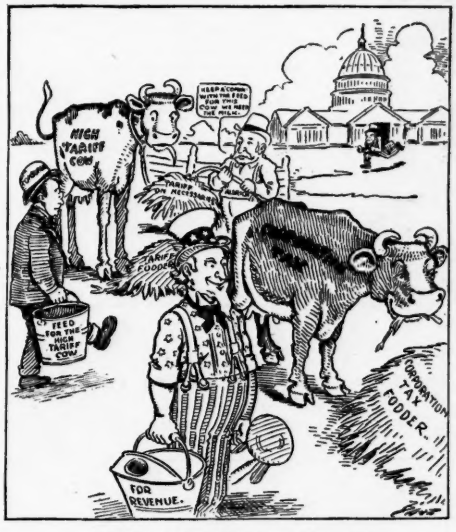
"BEVARE OF THE VIDDERS!"

From the *Herald* (New York).



A SQUARE DEAL FOR ALL.

From the *Traveler* (Boston).



THE NEW CORPORATION TAX COW.

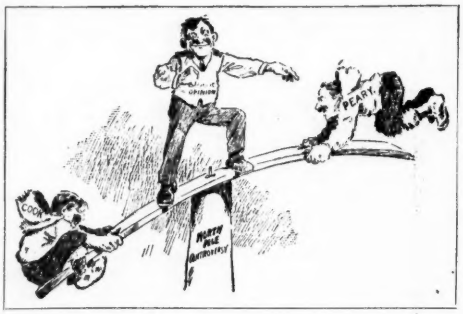
UNCLE SAM: "If this cow gives the milk I think she will, we can let up a bit on the high tariff critter."

From the *Journal* (Minneapolis).

to Messrs. Pinchot and Ballinger (who have had some differences of opinion regarding our conservation policies), while at the same time putting his stamp of approval on both men.

SPEAKER CANNON'S IDEA OF THE ORIGIN OF OUR BANKING SYSTEM IS THAT, LIKE TOPSY, IT "JI T GROWED."

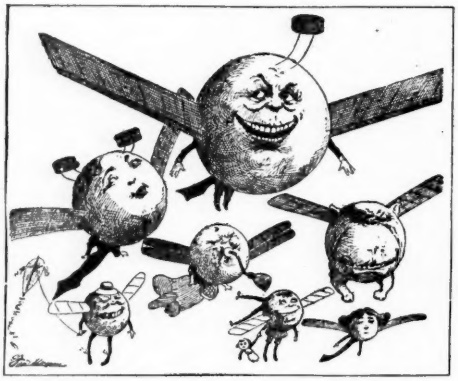
From the *Herald* (Boston).



"SEE-SAW, SEE-SAW."

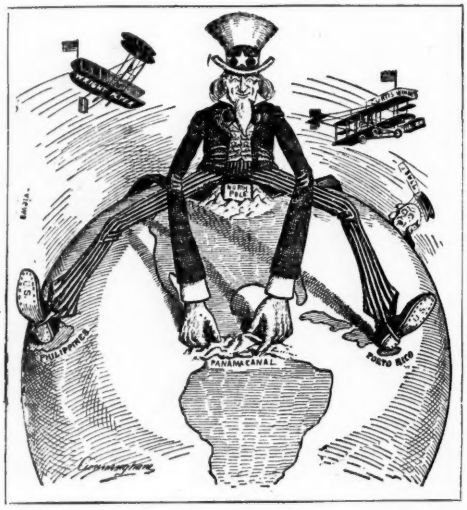
(Now it's Cook and now it's Peary,—indicating how public opinion sways from one to the other of the polar contestants.)

From the *Leader* (Cleveland).



THE WORLD AND HIS WIFE WILL BE FLYING SOON.

From the *Inquirer* (Philadelphia).



UNCLE SAM STRICTLY IN IT.

From the *Times* (Washington).

JUST SUPPOSE THIS HAPPENED!

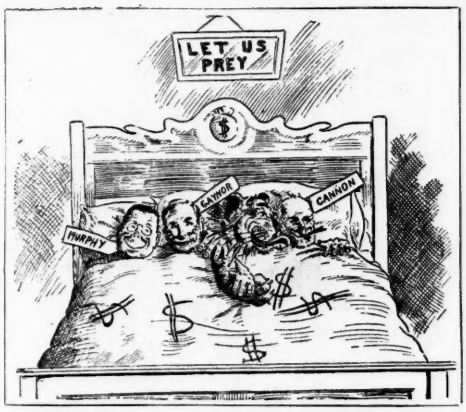
(Apropos of exploration controversies.)

From the *Star* (Washington).

On this page we have the Cook-Peary controversy, with a suggestion of what might happen if Mr. Roosevelt's African exploits should be questioned; the rapid progress in the art of flying; Uncle Sam's notable achievements throughout the world, and his recent art acquisitions from Europe. The cartoons on the following page relate to the municipal fight in New York City and to pending matters affecting China, Japan, and incidentally the United States.

"AND YET THEY SAY OVER THERE THAT I DON'T CARE MUCH FOR ART!"

From the *Press* (New York).



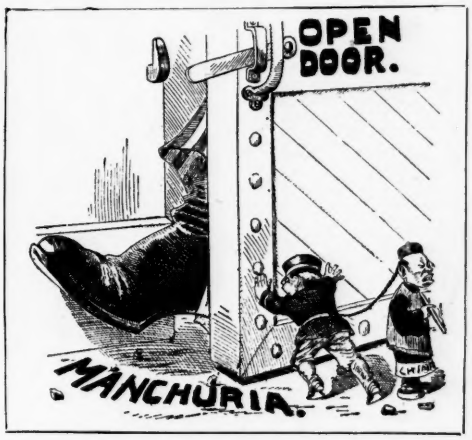
POLITICS MAKES STRANGE BED-FELLOWS.
From the *Call* (Socialist) (New York).

WILL HE GET THE CANARY?
From the *Journal* (Minneapolis).

WILL THEY QUARREL OVER THE SHELL?
From the *Herald* (New York).

"PLUGGED."
From the *Morning Oregonian* (Portland).

POOR JOHN!
(John Bull's plight,—with the Frenchmen flying over his head, the Germans building new *Dreadnoughts*, and the militant suffragette belaboring him in the rear!)
From the *Herald* (New York).



"CLOSING HON. DOOR."
From the *Morning Oregonian* (Portland).

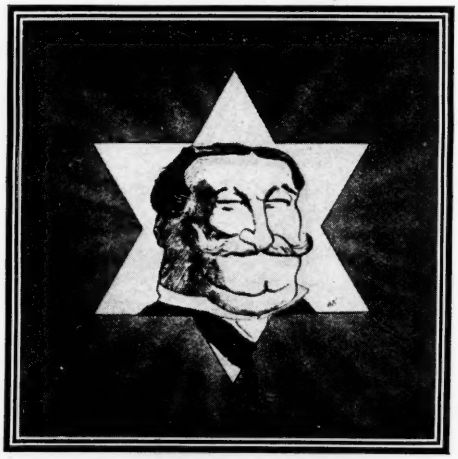
THE BEGINNINGS OF AMERICAN PROGRESS.

U. S.: "Could I possibly have sprung from that little thing?"

From *Amsterdammer* (Amsterdam).

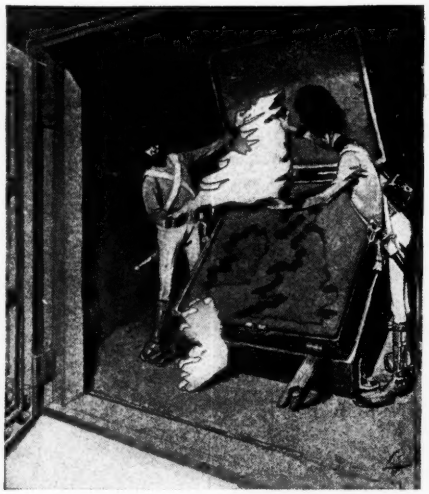
IS THIS TO BE THE FATE OF KOREA?

From the *National Review* (Shanghai).



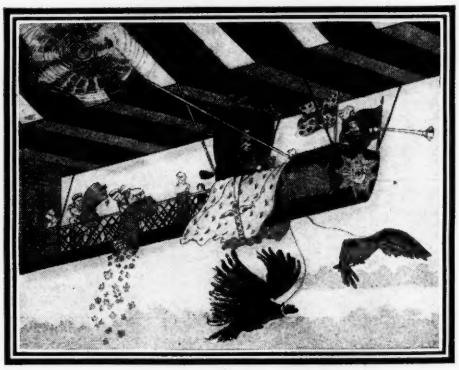
THE NEW STAR OF THE EAST.

(This is the way Mr. Taft's Far Eastern policy looks to the *National Review*, of Shanghai.)



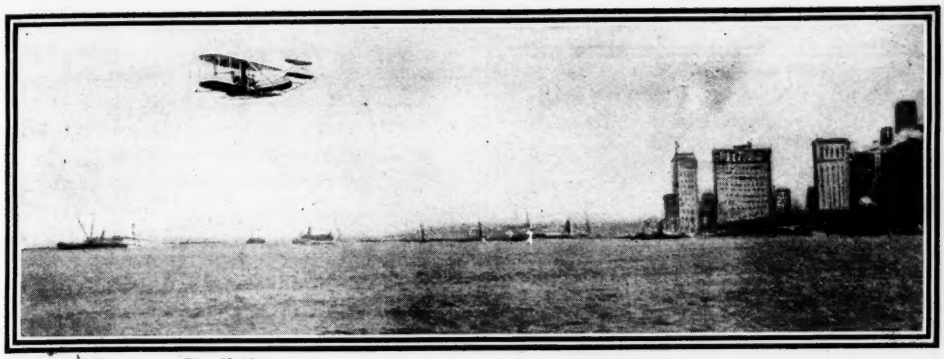
JOHN BULL'S LAST CHANCE FOR SAFETY.

(The cartoonist of *Ulk* (Berlin) suggests that to insure perfect security for the nervous, greatly harassed English people the British Isles be shut up each night in the strongest safe of the Bank of England.)



HIS IMPERIAL GERMAN MAJESTY'S AIR YACHT, "THE HOHENZOLLERN."

(A prophetic view by *Ulk*, Berlin.)



WILBUR WRIGHT APPROACHING GOVERNORS ISLAND ON HIS RETURN FROM THE FLIGHT UP THE HUDSON RIVER TO GRANT'S TOMB LAST MONTH.

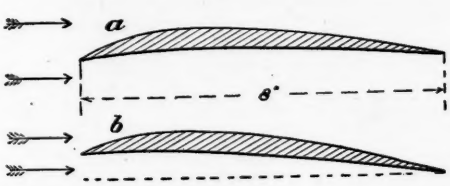
(The New York city skyline on the right.)

THE AEROPLANE—A RETROSPECT AND A FORECAST.

BY J. BERNARD WALKER.

HUMAN FLIGHT,—that dream of the centuries,—is distinctly an American achievement. Among the many enthusiasts who have given thought and effort to the solution of the problem, four Americans,—Maxim in England, Langley and the Wright brothers in America,—stand head and shoulders above their fellows; and this is said without the slightest disparagement of the investigations, theoretical and practical, of such men as Hargrave in Australia, Lilienthal in Germany, Pilcher in England, Ader in France, and Chanute and Zahm in America.

It was twenty years ago, in 1889, that Hiram Maxim, aided by several wealthy men, applied his inventive genius to the problem. Realizing at the very outset that man, because of his limited strength in proportion to his weight, could never hope to fly with flapping wings driven by his own power, he determined to build a steam-driven aeroplane, believing that this was the only form of heavier-than-air machine that held out any promise of ultimate success. At that time comparatively little was known about the supporting power of thin, inclined planes when driven through the air, or the resistance of the air to their progress, or the amount of power necessary to propel them. The Otto gas engine,—the progenitor of the light and powerful modern gas engine,—was in its very crude infancy; and there was no motor in existence that was at once sufficiently light to be carried by, and sufficiently powerful to drive, a self-sustaining, man-carrying aeroplane.



An 8-inch, curved aeroplane, which was tested on a rotating arm and gave good results. Maxim found that it had a decided lifting effect even when the bottom face was placed horizontally, as at *a*.)

Nothing daunted, Maxim determined to investigate the problem for himself "from the ground up." He built on his place, near London, an experimental workshop and devised some very ingenious machines for determining what form of plane would give the greatest sustaining power and at the same time experience the least resistance from the atmosphere. One apparatus consisted of a square box, or pipe, through which, by means of a fan, a stream of air was driven at high velocity. At the far end of the box aeroplanes of various forms were supported, and by means of automatic registering appliances both their lifting power and end-on resistance were ascertained. With this appliance also he determined what form of wooden strut offered the least resistance.

Another apparatus consisted of a horizontal rotating arm, whose outer end traveled

ONE OF THE LARGE SCREWS, 18 FEET IN DIAMETER, OF THE MAXIM AEROPLANE.*

through a circle 200 feet in diameter and carried the propellers and aeroplanes that were tested. A similar device was being used at about the same date by Professor Langley. Maxim made elaborate tests of the air propeller; and by means of a machine which automatically registered the thrust he tried out a bewildering variety of propellers, differing from one another in diameter, pitch, area, and form of blade. From the data thus collected he was able to select the type of propeller that was best adapted to drive the machine that he had in mind. The next problem to be wrestled with was that of providing a suitable motor, very light and very powerful for its weight. He built a pair of compound engines, with cylinders of high-grade cast steel, which, together, weighed 640 pounds and, with a steam pressure of 320 pounds to the square inch, developed 362 horse-power, or 1 horse-power for every 1.76 pounds of weight. Steam was supplied by a special water-tube, oil-fired boiler, which weighed about 1000 pounds.

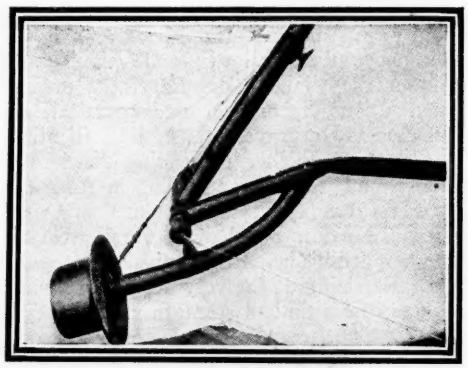
From what has been said above it will be evident that this, the first man-carrying aeroplane every built, was of enormous size and power, the planes being on the same generous scale as the engines. It will be seen, moreover, that the design of this parent machine of 1889-92 embodied the essential features of the modern aeroplane. It consisted of a main aeroplane, *a* (see line drawing), with a forward horizontal rudder, *b*, and an after horizontal rudder, *c*. There were also on each side of the machine two inclined lateral planes, shown in the photograph of the model, which could be attached or not as desired.

A comparison of the leading elements of this machine with those of a Wright machine of seventeen years later will be of interest:

	Maxim aeroplane. 1892.	Wright aeroplane. 1909.
Width, feet	104	40
Lifting surface, square feet	4,000	500
Weight, pounds	7,500	800
Horsepower	362	30
Propeller thrust, pounds	2,100	240
Speed, miles per hour	38	42

With 600 pounds of water in the tank and boiler and three men on board, the total weight of the aeroplane was less than 4 tons.

For the experimental testing of his machine Mr. Maxim laid a two-rail track on his grounds, on which it ran on four wheels, *f k*, while gaining headway. To prevent the machine from rising high into the air before its manipulation had been completely mastered, Maxim provided four additional wheels, *m l*, which, when the machine rose, would engage another rail, *h h*, on its under side and cause the machine to fly in the air at a predetermined distance above the ground. On the trial run the huge 4-ton affair not only rose from the lower track but

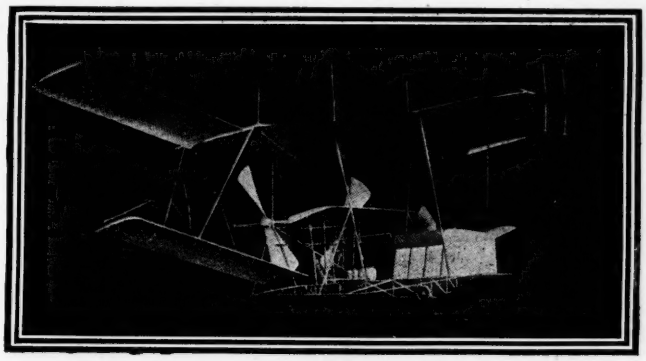


THE OUTRIGGER WHEEL FOR PREVENTING THE BIG AEROPLANE FROM RISING MORE THAN A FEW FEET FROM THE GROUND.

(This was one of four such wheels that ran against the under side of a pair of rails. The lift of the aeroplane was so great that the axle collapsed.)

* The illustrations of the Maxim aeroplane accompanying this article are from "Artificial and Natural Flight," by Sir Hiram Maxim. (Macmillan.)

bore so heavily against the upper track that it was torn loose, and one of the rear axles, of 2-inch steel tubing, was doubled up, as shown in one of the illustrations. Maxim estimates, from the character of the wreck, that the total lifting effect of the machine must have been at least 10,000 pounds.

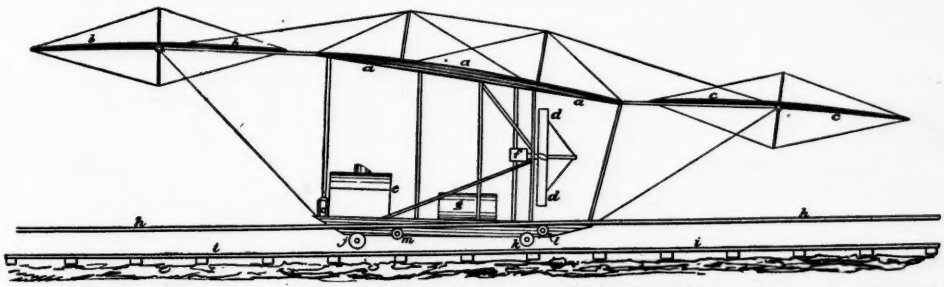


PHOTOGRAPH OF A MODEL OF THE MAXIM AEROPLANE, SHOWING THE FORE AND AFT HORIZONTAL RUDDERS AND THE SUPERPOSED AEROPLANES.

Already over $100,000 had been expended in the experiments, and the backers of the enterprise becoming discouraged, the work was abandoned. Although Maxim had failed to make a free flight of any length, he had piled up in his few years of work a mass of practical information which was destined to prove invaluable to later investigators. Had he and his associates persevered a little longer there is no doubt in the mind of the writer that successful mechanical flight would have been achieved nearly two decades earlier than it was.

Following Mr., now Sir, Hiram Maxim's ambitious experiments with a man-carrying machine came those of the late Professor Langley, the secretary of the Smithsonian Institution. Langley had already made both a theoretical and a practical investigation of the laws of aeroplane flight, in which he used a "whirling table," which he designed for testing the resistance and supporting power of planes. His experimental work, though done on a smaller scale than Maxim's,. was of a more detailed and philosophic character. It resulted in the formulation of certain "Laws of Flight," which were embodied in his great work, "Experiments in Aerodynamics," published in 1891, and have been accepted the world over. The most valuable of these was his affirmation of the principle that the *area of the necessary supporting surface in an aeroplane varies inversely as the square of the velocity*,—that is to say, if a machine, like the Wrights', requires 500 square feet for a speed of 40 miles per hour, at 60 miles it would need only 222 square feet, and at 100 miles per hour 80 square feet would be sufficient. Langley showed that the explanation of this paradox was to be found in the fact that at the higher speeds the planes passed so rapidly on to new and undisturbed bodies of air, and stayed over one body for so brief an instant, that the planes had no time to completely overcome the inertia of the air and force it downward.

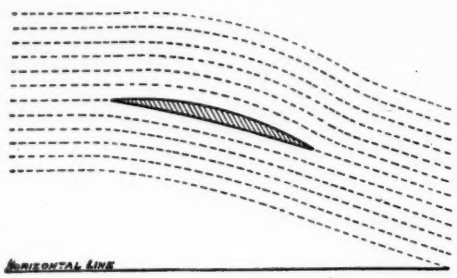
He explained the phenomenon by likening the high-speed plane to a skater moving swiftly over thin ice, who was never long enough on any one portion of the ice to bend it to the breaking point. Having formulated the laws of aeroplane flight Langley designed



(*a*, Main aeroplane; *b*, forward horizontal rudder; *c*, after horizontal rudder; *e*, boiler; *f*, engines; *d*, propellers; *f*, *k*, wheels for running on starting track *i*, *i*; *m*, *l*, wheels to prevent machine rising above track *h*, *h*. This machine had 4000 square feet of surface and weighed four tons.)

SIDE VIEW OF HIRAM MAXIM'S AEROPLANE OF 1892.

a man-carrying aeroplane, and built a model, one-quarter size, which he called the "aerodrome" (air-runner). This machine, which was driven by a 1-horse-power steam engine and weighed 27 pounds, made, in 1896, three successful flights, each of less than a mile in length, over the Potomac River, near Washington. The "aerodrome" alighted on an even keel unharmed. Encouraged by this success, Langley secured from Congress an

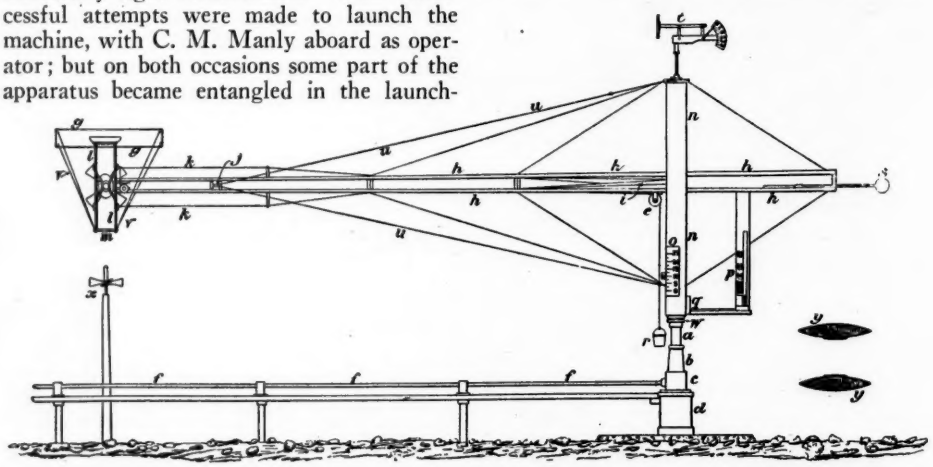


(An aeroplane at an extreme elevation of 1 in 4, showing how the stream lines of air follow closely the upper and lower surfaces.)

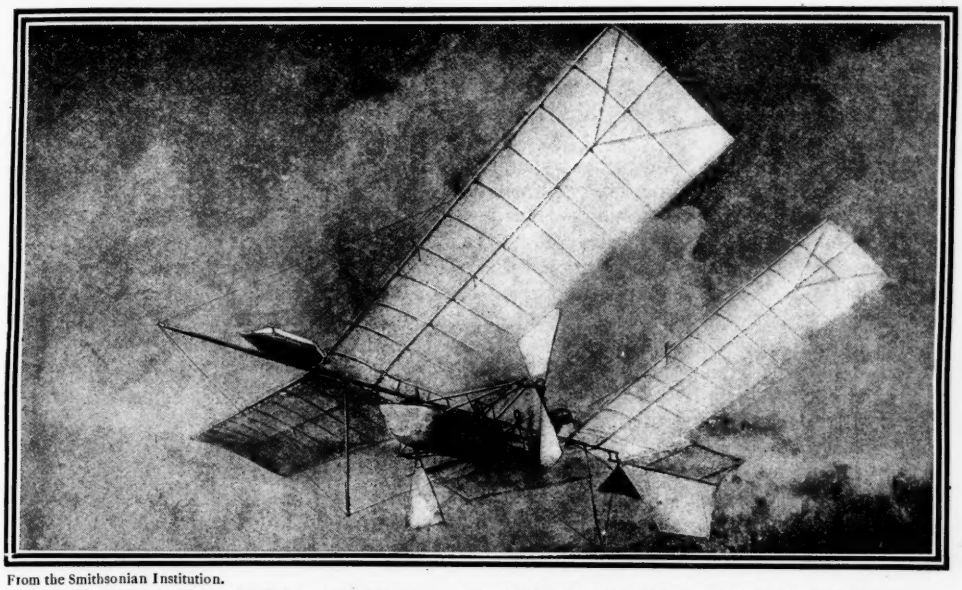
appropriation of $50,000 for the construction of a full-sized machine. It was an enlargement of his model and consisted of a longitudinal body, carrying the engine, the fuel, two propellers,—one on each side,—two planes, one forward and one aft of the propellers, and a tail which acted as a compound rudder and steered the machine in both the vertical and the horizontal direction. The control was largely automatic. The engine, of 50 horse-power, was of phenomenally light construction. Two unsuccessful attempts were made to launch the machine, with C. M. Manly aboard as operator; but on both occasions some part of the apparatus became entangled in the launching device and it was thrown headlong into the Potomac. Discouraged by the unjust ridicule of the daily press, and by want of funds, Langley abandoned the project. Here, again, just on the eve of success, the progress of the aeroplane was summarily stopped by want of the necessary capital and the failure of the public to appreciate the significance of what had been done.

Both the Maxim and the Langley aeroplanes may be said to have failed to fly because of man's total inexperience in the art of flying. We now know that it was a mistake to build these costly machines and then to use them as experimental apparatus in which to learn the very A B C of flying. The fault lay not with the machine but with the man. In all probability Maxim and Langley had both produced a practical flying machine; and had a Wright, a Farman, or a Bleriot, with his knowledge of the "feel" of the air, been available, Maxim's upper guiding rail and Langley's launching device could have been dispensed with, and in all probability both machines, after a few trials, would have made a more or less successful flight.

Evidently it was necessary to approach the problem along some other lines; and this was exactly what a German engineer, Otto Lilienthal, was doing between the years 1891 and 1896. This brilliant investigator built several aeroplanes with wings somewhat resembling the wings of a bat; and using the weight of the machines and of himself as a driving power, he made, in this period, over two thousand gliding flights through the air.



(Maxim's machine with a rotating arm, 31.8 feet long, to which were attached the planes *g* and propellers *l* to be experimented with. Professor Langley had a similar machine and called it a "whirling table.")



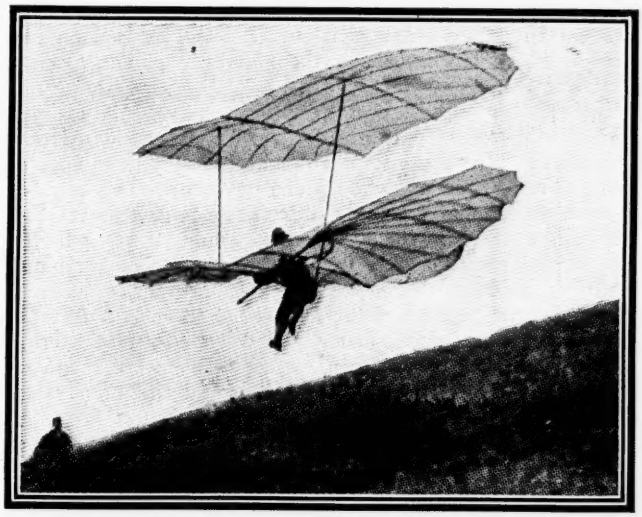
From the Smithsonian Institution.

THE LANGLEY MODEL AEROPLANE IN FLIGHT ABOVE THE POTOMAC RIVER.

(This machine, like the Maxim, failed to fly, but greatly assisted the progress of aviation.)

His method was to carry his "glider" to the top of a hill and, making a running start with the planes inclined upwardly against the air, launch himself free of the ground and glide for a distance of 400 or 500 yards down to the bottom of the slope.

A glider, or a motor-driven aeroplane, will move in perfect equilibrium without pitching or lateral rolling just as long as the center of gravity of the machine and the operator falls in the same vertical line with the center of pressure of the air. If the downward pull of the center of gravity be forward of the upward thrust of the center of air pressure, the machine will pitch forward and downward. If the center of gravity be to the rear of the center of pressure, the head of the machine will be lifted and the tail depressed. If the center of gravity be to the right of the center of pressure, the whole machine will begin to turn over to the right. If the center of gravity be to the left of the center of pressure, the machine will begin to turn over to the left. If this derangement of the equilibrium be not quickly corrected it can readily be seen that the machine will capsize completely. Lilienthal corrected any eccentricity of the points of the centers of gravity and of pressure by shifting his weight to the required degree. Unfortunately, he was killed in 1896 by the



THE LAST PHOTOGRAPH TAKEN OF HERR LILIENTHAL AND HIS DOUBLE-DECKED GLIDING MACHINE.

sudden upsetting of his machine in a gust of wind. His experiments were taken up by Mr. Pilcher in England, who, all too soon, became a martyr to aeronautics, his death being caused by a fall similar to that of Lilienthal.

At about the time of Lilienthal's death the scene was shifted to America, where, in a few years' time, the art of motor-driven, sustained, and perfectly controlled flight was to see its first successful demonstration. In the year 1896 Octave Chanute began his classic experiments with the gliding machine, in which he introduced the valuable principle of controlling the balance not by the Lilienthan method of shifting the weight of the operator but by altering the planes themselves in such a way as to cause the necessary shift in the center of pressure. He also tested out gliders with multiple planes, in which the angle of inclination could be altered at will during flight. His most important contribution to the art was the construction of a glider with two superposed trussed planes, which carried a tail for the control of direction. This glider may be considered as the parent of the biplane machines with which the world has lately become so familiar.

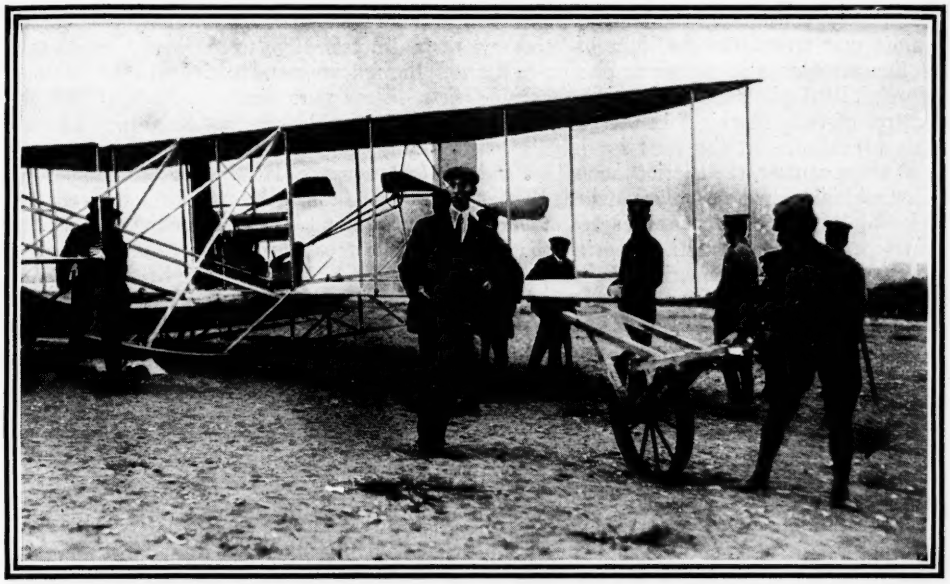
Matters had now been carried to a point where everything was ripe for a successful demonstration of human flight; and the opening year of the twentieth century must ever be regarded as marking one of the most important epochs in the history of flying; for it was in this year that two bicycle makers of Dayton, Ohio,—Wilbur and Orville Wright,—became so much attracted to the problem that they began that practical investigation which has made them forever world-famous.

Hitherto the new school of experimentalists, in their work with gliders, had aimed to produce a machine with automatic stability. The Wright brothers decided to work out the problem upon totally different lines and build a glider in which the control would be entirely manual. To control the tendency to pitching, they placed on a framework directly in front of the main planes a pair of small subsidiary planes, whose angle or pitch to the direction of flight could, by means of a lever, be varied at will by the operator. For securing lateral stability they introduced what is probably the most valuable feature in the modern aeroplane, namely, a method of warping or twisting the ends of the main planes in such a way as to balance an excess of pressure on one end of the aeroplane due, say, to a gust of wind by inducing an opposing pressure. Thus, if the machine were beginning to roll over toward the right, the rear tips of the right-hand half of the planes would be depressed, causing an increase of upward thrust on that side, and the rear tips of the left-hand half of the planes would be lifted, causing the air to strike them on their upper side with a depressing effect. Steering to right or to left was accomplished by a vertical rudder carried at the rear. In order to diminish resistance, the operator lay prone upon the lower plane.

With this apparatus the Wright brothers went down to the sand dunes near the coast of North Carolina and spent no less than three years in making gliding flights. At the end of that time they had qualified for the degree of "bird-man." They were at home in the air. The quick manual control of the proper devices to meet any particular gust or disturbance of the air had become so much a matter of habit as to be practically instinctive. They were now ready for the grand experiment. A 16-horse-power motor was bolted to the lower plane and framework; two screw propellers were put in position at the rear, and with this machine, weighing 750 pounds, on December 17, 1903, a short flight of a few seconds was made. Subsequently, during these experiments, a flight of 850 feet was accomplished. To all intents and purposes the goal so eagerly sought through the centuries was won. The brothers returned to Dayton, where circular flights were practiced in a large field; and, at last, on October 5, 1905, a flight of 24 miles was made in thirty-eight minutes, at a speed of 38 miles per hour.

The claim of the Wright brothers to be considered the inventors of the first successful man-carrying flying-machine cannot be successfully disputed; for it is a most significant fact that the machine which flew in 1903 on the Kill-Devil dunes of North Carolina combined all the essential principles of the aeroplanes that have performed such wonderful feats during the present year. The different forms of adjustable wing tips which were found on several aeroplanes at Reims are merely modifications of the Wrights' devices for warping the planes.

Although the announcement of the successful flights at Dayton was received with many expressions of disbelief,—a disbelief which was intensified by the Wrights' refusal to make any public exhibition,—their



A THREE-QUARTER FRONT VIEW OF THE WRIGHT BIPLANE, AT GOVERNORS ISLAND, N. Y.

(Wilbur Wright is in center of illustration. The officer at the right is placing the wheel at one end of the lower plane in order to push machine back to the shed.)

success proved a powerful stimulus and awoke the dormant interest in the aeroplane. Santos-Dumont built a cellular machine, of the box-kite form, and made some short flights in France in 1906. Bleriot and Esnault-Pelterie had considerable success with the monoplane, and Farman and Delagrange with the biplane, the two latter aviators making some short flights in 1907.

In 1908 the art of flying progressed by leaps and bounds. The various achievements are so fresh in the public mind that it is sufficient for the purpose of this paper to give a mere recapitulation of the principal performances. Orville Wright, in the Government tests at Fort Myer, made flights of over an hour's duration, and on various occasions carried an officer as a passenger. Wilbur Wright went to France and, by fulfilling certain conditions, sold the French rights to his patents for $100,000. In the successful trials he flew 42 miles in one hour and thirty-two minutes on September 21, and on October 10 made a flight of over an hour, carrying one passenger. On another occasion he rose to a height of 380 feet; and on the last day of the year he broke all records by a flight of two hours and twenty minutes' duration, in which he covered 77 miles. In October, Farman in his Voisin biplane, made the first cross-country trip on record, flying from Châlons to Reims, a distance of 17 miles. In the same month, Bleriot, in a monoplane, flew across country from Toury to Artenay and back, a distance of 17.4 miles.

Wonderful as were the feats of flying in 1908, they were destined to be eclipsed by the sensational performances of the present y r. On July 30 Orville Wright successfully completed the Government's tests at Fort Myer by making a cross-country flight of 10 miles, with a passenger aboard, at an average speed of 42.58 miles per hour. He had previously made a flight, with an officer as passenger, that lasted one hour and twelve minutes. The machine was accepted by the Government, and the Wrights received $30,000 as its purchase price. The most sensational event of the year, at least in its appeal to the popular imagination, was Bleriot's successful 21-mile flight across the Channel on July 25 in his monoplane.

But it was reserved for the great aviation meet at Reims, which opened on August 22, to prove to the world how great an advance had been made in the art of human flight. No less than thirty-eight aeroplanes were entered, of which at least thirty-six made successful flights. The machines were divided about equally between the biplane and the monoplane types. America was represented by Curtiss with his light, small, swift, and

beautifully constructed biplane. Here the public was treated to the sight of as many as five aeroplanes in the air at one time, the more skillful pilots exhibiting a remarkable control of their machines in the gusty winds that prevailed. In the tests for high speed over short courses, the Bleriot monoplane and Curtiss' biplane were evenly matched, Bleriot winning the 6.21-mile race at a speed of 47.78 miles per hour and Curtiss securing the International Cup by covering the 12.42-mile course at a speed of 47.04 miles per hour. That the aeroplane had made wonderful strides in endurance was shown by Farman's winning the long-distance race, with a record flight of 111.88 miles in three hours, four minutes, fifty-five and two-fifth seconds. It should be mentioned that during the summer and autumn of this year both the Bleriot monoplane and the Farman biplane made successful flights with three people aboard.

Since the close of the Reims meet the Wright brothers have proved that the failure of their machines to distinguish themselves on that occasion was due rather to unskillful handling than any inherent mechanical inefficiency. Early in October, Orville Wright, in an exhibition at Berlin, rose to the unprecedented height of over 1600 feet. At about the same time his brother, during the Hudson-Fulton festival, flew successfully from Governors Island up the Hudson River, around one of the visiting warships moored off Grant's Tomb, and back to the island.

So much for the achievements of the past two years. It is a truly marvelous record, far exceeding the expectations even of the enthusiasts. And yet it must be evident to any thoughtful and impartial observer that, great as these performances are, they do not by any means justify the extravagant claims which have been made for this new and fascinating toy,—for toy it is, at least in its present state of development. There is a long road to travel before it becomes available for the average sportsman and takes its place with the automobile as an established means of recreation.

Unquestionably the field of sport will be its first and most successful sphere of serious exploitation. As an instrument of war it will be useful for scouting purposes, and possibly for attacking lines of communication, cutting telegraph wires, or even carrying a few men on a forlorn hope to blow up isolated and undefended bridges. The aeroplane will never be employed to carry high explosives in the expectation of dropping them successfully upon important works of the enemy, and this for the reasons, first, that the amount which could be carried would be too insignificant, and, secondly, that from such an unstable and swiftly moving platform it would be impossible to launch the explosives with any accuracy of aim. To avoid machine-gun fire the aeroplane must fly at an altitude of at least a mile; and at such a height the dropping of explosives upon a particular object with any certainty of hitting the mark would be highly problematical. But for scouting the aeroplane would be ideal. Two men would man the machine, the aviator and an observer, the latter armed with a camera and a sketch book. Flying high and at high speed, the machine would be extremely hard to hit; and the observer would be carried over a wide circuit above the enemy's country, sketching the topography of the land and making notes on his map of the numbers and disposition of the enemy's forces and of the location and strength of his artillery and earthworks.

But when we are told that Bleriot's flight across the English Channel opens up the way for the transportation of an army of invasion of one hundred thousand men we are being led into the realms of pure imagination. To transport one hundred thousand men would require, in the present state of the art, not less than thirty thousand aeroplanes. Where, one asks, would they find the vast extent of cleared country, smooth and level, on which to land, and where would the machines be parked? If successfully parked, their acres of white canvas would make an easy mark for long-range shell fire. The whole thirty thousand machines would be ablaze by the time a dozen shells had been dropped into their midst; and the army of invasion would thus find itself cut off from its base and bereft of any possible means of communication, the Channel being held presumably by the enemy's ships.

The small freight-carrying capacity of the aeroplane will forbid its exploitation as a means of transportation; and its entire dependence upon favorable weather conditions will render it, at least for the present, incapable of fulfilling a contract for the conveyance either of mails or express matter or of living up to the exacting schedule of regular passenger service.

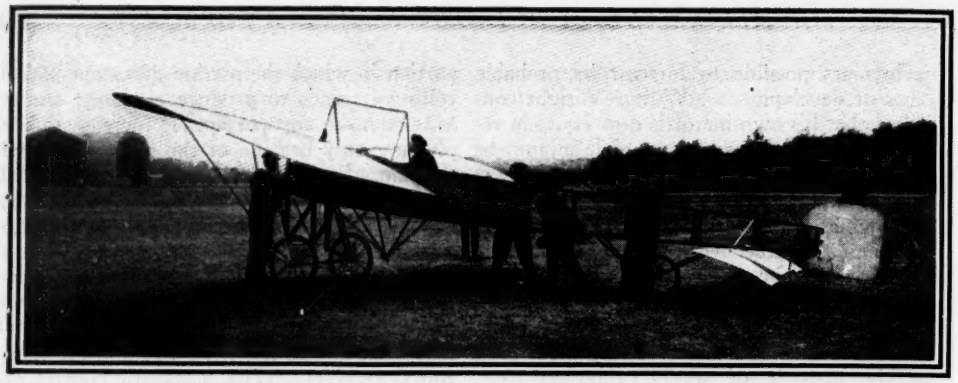
Admitting, then, that the aeroplane will be practically restricted to the field of sport,

it becomes possible to forecast its probable lines of development. Wilbur Wright considers that his own motor is now equal in reliability to the average automobile motor; he has made 280 successive flights without a motor mishap and claims to have run one of his engines in a shop test for seven consecutive hours. He believes that the next notable advance will be made in the direction of "high flying." The difficulty of finding a landing place, in case of the motor stopping, will be largely obviated by flying high, even at the altitude of several thousand feet. Thus, at one mile elevation, in case of the stoppage of the motor, the operator would be in a position to glide for seven miles, on a slope of one in seven, before reaching the ground. Since this glide can be made in any direction, a choice of a landing place can be made out of the total area of 150 square miles included in a circle of 14 miles in diameter. High flying, moreover, will take the machine out of the belt of aerial billows and eddies caused by the passage of the wind over the irregularities of the earth's surface.

It cannot be denied that the most serious defect in the aeroplane is its inability to leave and return to the ground without considerable risk, except in a comparatively quiet atmosphere; and until this limitation has been removed it must be regarded as still in the experimental stage, even for the purposes of sport. If the aeroplane is to take its place with the sailing yacht and the automobile it must be rendered so far independent of atmospheric conditions that the owner can "go for a sail" in any but the strongest winds. No sport can become popular in which three-fourths of a day are spent in watching for a summer breeze to die down so that a trip may be taken in the remaining fourth. A possible solution may be found in the use of lifting screw-propellers, which will raise the machine vertically, clear of the ground, and be thrown out of gear as soon as sufficient forward velocity has been attained. The same propellers would allow of a gentle vertical descent in alighting.

The improved aeroplane of the future will without doubt contain some automatic device for maintaining equilibrium, both longitudinal and lateral. The gyroscope has been suggested for this purpose; but the problem of gyroscopic control is not so simple as it seems. Because this device has been used successfully to prevent rolling in a steamer, we must not jump to the conclusion that it can be so used in an aeroplane. In the exact proportion in which the marine gyroscope resists rolling it tends to produce pitching; and it fails to make any perceptible increase in the pitching only because of the great length of the ship. Possibly the problem will be solved by attaching some of the heavier parts, such as the tank or radiator, to the planes with a hinged connection, so arranged that these parts will hang always in a vertical position. Their movements with regard to the planes might then be made to control, through suitable connections, the wing tips and the horizontal rudders. With automatic control installed the aeroplane would instantly, as the bird does automatically, adjust itself to any sudden gusts, eddies, etc., of the wind.

The sporting aeroplanes of the future will be divided into two classes,—slow cruisers of moderate horse-power and large supporting surface and high-speed racers of small surface and large horse-power. It was mentioned earlier in this discussion that the area of the surface necessary for flight varies inversely as the square of the speed. Nature has recognized this law in the evolution of the bird,—the slow-flying birds having wings of considerable width in proportion to their length and the fast-flying birds, such as the swift and the albatross, possessing long, narrow, bladelike wings. The racing aeroplane, therefore, will have great length of entering edge, but the planes will be narrow. Possibly they will be arranged to reduce their surface by reefing as the speed increases. It was shown above that if the Wright machine at its present weight could be driven 100 miles per hour the area of its planes might be reduced from 500 to 80 square feet. The weight of the superfluous 420 square feet, with its framing, could be put into a more powerful motor. The racing machine will be very light, long of plane, and lean in construction. The Wright machine of 30 horse-power weighs 800 pounds and ordinarily can be driven at about 40 miles an hour. The Curtiss machine of 50 horse-power weighs 600 pounds and has made a speed of 48 miles an hour, and Santos-Dumont claims to have lately reached a speed of 55 miles an hour with a little 30 horse-power monoplane weighing only about 250 pounds. Undoubtedly the mile-a-minute mark will be reached and considerably exceeded, though not so quickly as the public believes. For as a bar to high speed there stands the immutable law that a body, in moving through the air, encounters a resistance, which increases approximately as the square of the speed.



A SIDE VIEW OF THE BLERIOT MONOPLANE WHICH FLEW ACROSS THE ENGLISH CHANNEL ON JULY 25.

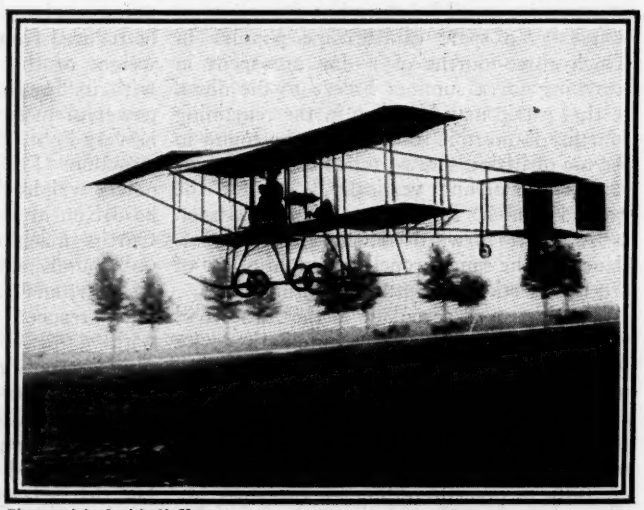
HOW AN AEROPLANE IS BUILT.

BY STANLEY YALE BEACH.

IN all probability the aeroplane will ultimately lead the automobile as a vehicle of sport, while for the pleasure trips of two or three people about level and open country or near rivers or lakes it will be decidedly in vogue. This article aims to give a clear idea of the different kinds of heavier-than-air flying machines of the aeroplane class that are now being built and successfully operated.

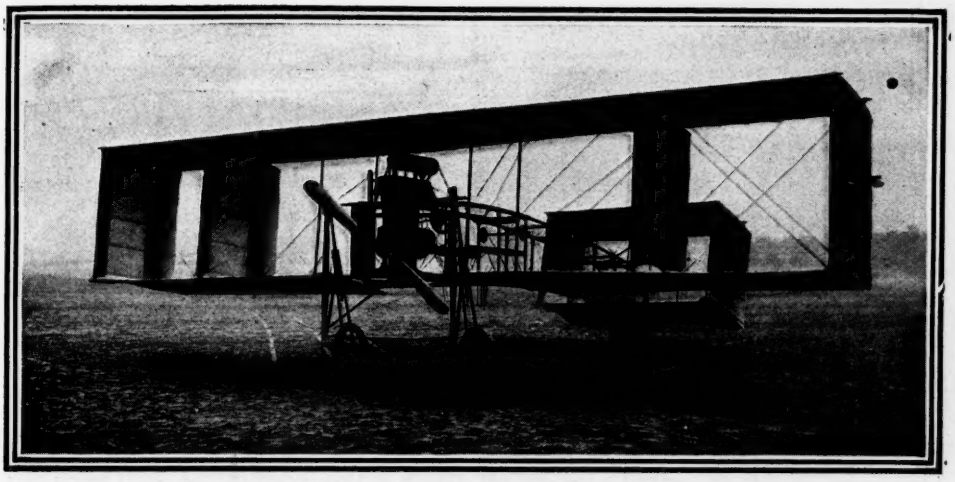
Besides aeroplanes the two other classes of flying machines that do not depend upon gas for support are helicopters, or lifting-screw flyers, and ornithopters, or flapping-wing machines. No machine of either of these types has ever made a flight, although several helicopters have risen from the ground and shown excellent lifting power. The best of these machines have propellers of large diameter,—about 20 feet,—the blades of which are practically small aeroplanes. The question of the lifting of man and machine in this manner has been solved, so that there only remains for solution those of dirigibility and the maintenance of equilibrium of the apparatus.

As for the aeroplane type of flying machine, this is generally classified under three heads, as follows: (1) Monoplanes, (2) biplanes, (3) triplanes, or multiple-surface machines. Aeroplanes of the first class generally consist of a single plane, or pair of wings, attached to the front end of a long body which terminates at the rear in some kind of a tail, combined with horizontal and vertical rudders. Biplanes, triplanes, and other multiple-surface machines, in addition to a horizontal rudder in front, generally have a tail mounted upon sticks or bamboo poles extending back from the main planes; although the latest Voisin biplane has a body of square cross section similar to that of a monoplane, upon which the box tail is so



Photograph by Levick, N. Y.

FARMAN FLYING WITH A PASSENGER AT CHALONS, FRANCE.



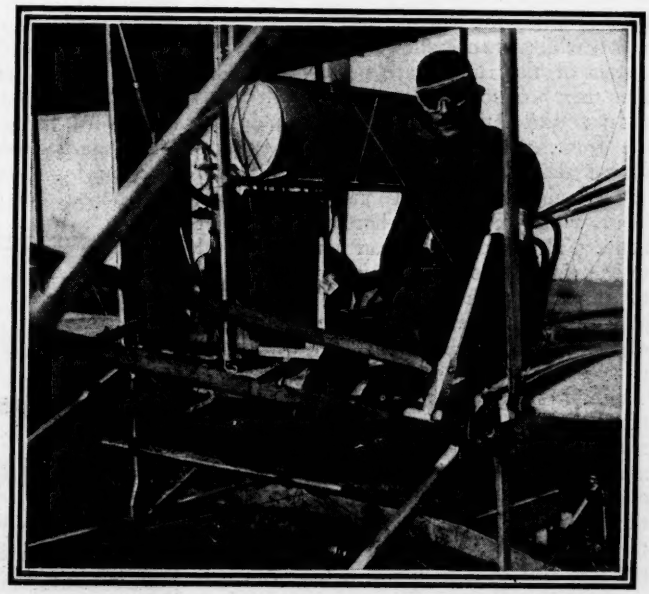
THE FRONT VIEW OF THE LATEST TYPE OF VOISIN BIPLANE.

pivoted that it can be inclined upward and downward and made to act as a horizontal rudder. The vertical rudder for steering right and left is generally placed in the center of the box tail.

THE WRIGHT MACHINE—MOST EFFICIENT OF AEROPLANES.

Among the aeroplanes of American build the first machine to be noted is the Wright biplane. The fact that the aeroplane of these famous brothers is, as it stands today, the same in its essential features as when they first mounted a motor upon it six years ago shows how thorough was the preliminary work they did before attempting power flight. Despite the apparent crudity of the Wright aeroplane this machine is by far the most efficient that has ever been produced. At the present time it holds the speed record for biplanes of low horsepower, and also the record for height, while there is no doubt that either of the Wrights could establish a new record for endurance.

The motor-driven aeroplane of the Wright brothers, like their original gliding machine, consists of two planes, about 40 feet long by 6 feet from front to back, and spaced about 6 feet apart. These planes are connected by uprights and are mounted upon two long runners that extend out in front about 10 feet and curve upward in order to act as a support for the horizontal rudder. This consists of two small superposed planes,



LUCIEN LEFEBVRE, THE DARING FRENCH AVIATOR, KILLED RECENTLY BY A FALL IN HIS MACHINE.

(The central part of the Wright biplane, showing the operating levers, motor, radiator, gasoline tank, and the starting rail below.)

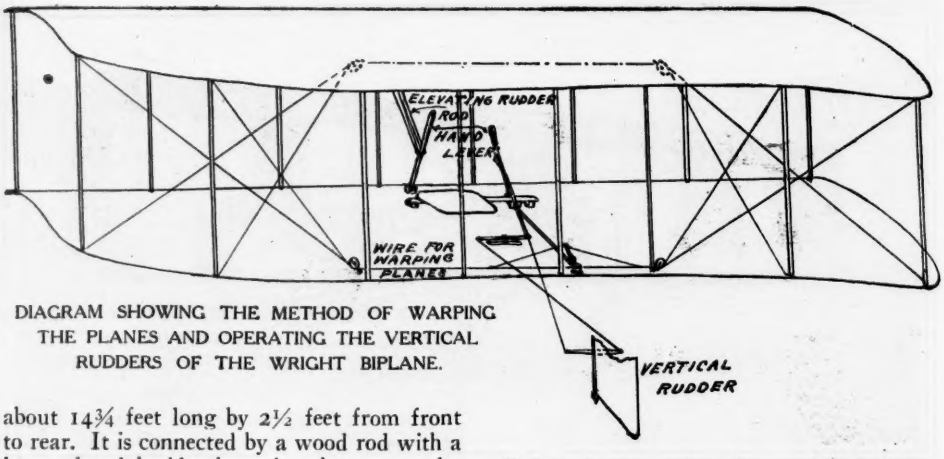
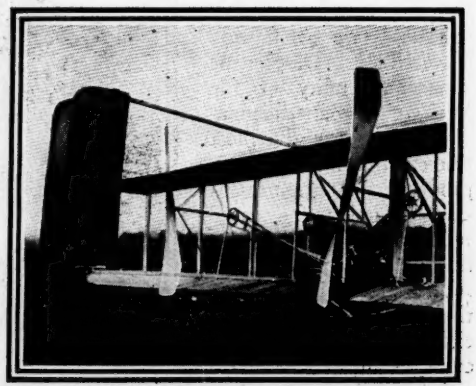


DIAGRAM SHOWING THE METHOD OF WARPING THE PLANES AND OPERATING THE VERTICAL RUDDERS OF THE WRIGHT BIPLANE.

about 14¾ feet long by 2½ feet from front to rear. It is connected by a wood rod with a lever placed beside the aviator's seat on the front edge of the lower plane. By moving this lever forward or backward with his left hand the aviator can direct the horizontal rudder downward or upward and cause the machine to descend or ascend at will. The front rudder is constructed in an ingenious manner so that its surfaces become concave on the under side when they are turned upward and on the upper side when pointed downward. When in the neutral position they are perfectly flat. Thus advantage is taken of a curved surface (which produces a greater lift) to direct the machine upward or downward, while when it flies on a level keel the planes of the rudder are perfectly flat, so that they produce the least resistance.

In addition to the horizontal rudder in the front, there are twin vertical rudders placed about the same distance at the rear of the main planes. These are operated by a lever which the aviator holds in his right hand. This same lever can also be moved to the right or to the left, in order to warp the planes near their outer ends for the purpose of maintaining the transverse stability of the machine. The method by which this is accomplished is shown in the diagram. Two wires extend downward from the tops of the first and second uprights on the outer rear edge of the upper plane. These wires are joined to short pieces of chain, which pass over pulleys fastened to the center portion of the lower plane. A rod extends back from the operating lever and carries a short arm near its rear end, to which a wire connecting with the wire running to the upper plane is fastened. When the lever is swung to the left (as shown in the diagram) the wire connecting the upper ends of the uprights is pulled in that direction, the result being that the right rear edge of the upper plane is pulled downward, as shown. Other wires run from the bottom ends of the right-hand rear uprights up over pulleys on the center part of the upper plane and down to the bottom ends of the uprights on the other side.

When the rear edge of the upper plane is pulled downward in the manner described, the lower ends of the uprights move downward also, and in so doing pull on the wires connecting them with the uprights on the other end of the lower plane. The result is that the latter uprights are raised and with them the rear edges of both planes. Thus it will be seen that when the rear part of the planes on one side of the machine is curved downward, the rear part of the planes on the other side is curved upward to a like extent. The curving of the planes produces a greater lift on one side and reduces the lift on the



Photograph by Levick, N. Y.

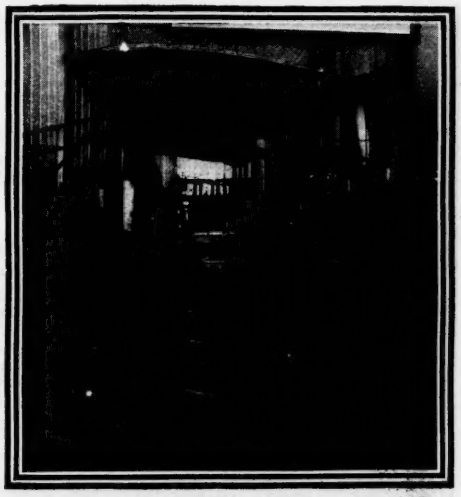
A REAR VIEW OF THE WRIGHT BIPLANE, SHOWING TWIN RUDDERS AND PROPELLERS AND INCLOSED CHAINS WHICH DRIVE THEM.

other side and the machine quickly rights itself. By moving the lever forward or backward the twin vertical rudders can be set. In making a turn, however, it is generally necessary to tip the machine slightly inward. In order to do this, the lever must be pushed forward and sideways at the same time.

PROPELLING POWER.

The power plant of the Wright aeroplane consists of a four-cylinder water-cooled motor of 30 horsepower, which drives by chains two propellers placed at the rear of the planes at equal distances each side of the center line of the machine. In order to reverse the direction of rotation of one of these propellers, the chain which drives it is crossed. The driving chains of both propellers run through steel guiding tubes. The propellers are about 8½ feet in diameter, and they turn at a speed of from 400 to 450 revolutions per minute. They are made of wood and are very light in construction. The blades are wrapped with silk in order to strengthen them. The thrust obtained when the machine is anchored is only from 180 to 200 pounds, the propellers showing their best efficiency (about 75 per cent.) when the aeroplane is in flight. As a consequence of this small initial thrust it has been found necessary to provide a starting device, which, in this instance, consists of a single rail 75 feet long, upon which the machine rests on rollers. At one end of the rail is a tower with a heavy weight, the rope from which passes around a pulley at the other end of the track and runs back to the small car upon which the aeroplane is placed. When the weight falls, the machine is jerked forward with its propellers running and is launched into the air at a speed of 28 miles an hour. Ordinarily the machine can attain speed enough, when driven along the rail by its propellers alone, to rise when the end is reached, and in one instance last spring, in Italy, Wilbur Wright started on his runners on the wet grass. The brothers prefer skids and the starting rail in place of wheels on account of the possibility of alighting upon rough ground without damage. Eventually they will probably be able to start off the ground on skids without the necessity of a starting rail.

The use of two slow-speed propellers of fairly large diameter is one of the reasons for the efficiency of the Wright machine, the other chief reason being the curve of the surfaces of the planes. This curve is very nearly the arc of a circle and is not of the parabolic



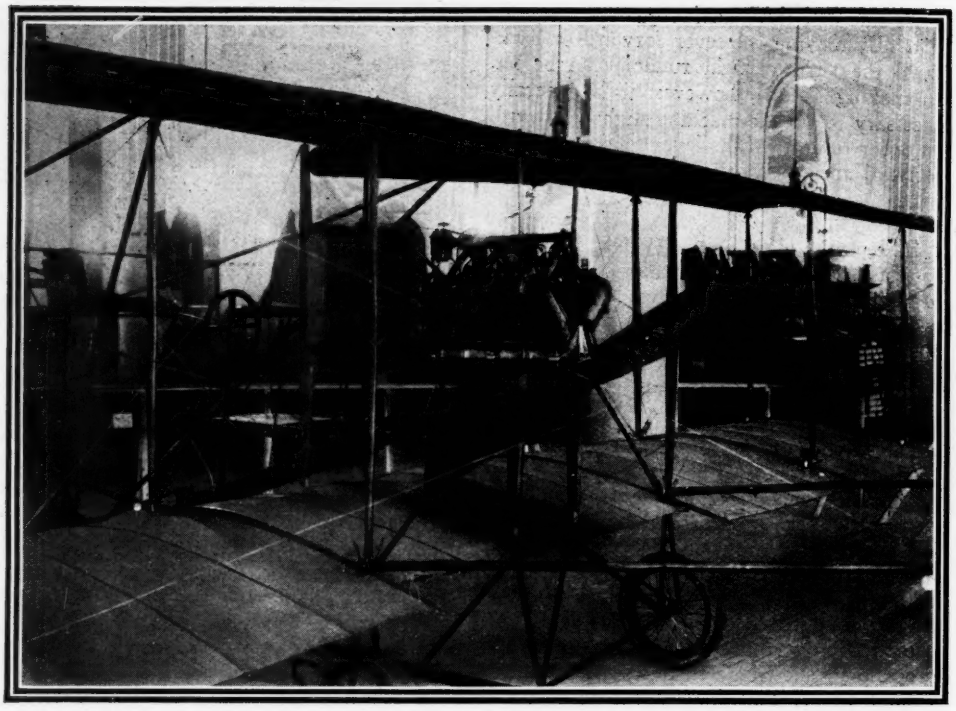
END VIEW OF THE CURTISS RACER.

(Showing balancing plane on the center of the front upright and the skid on under side of the lower plane. This illustration gives a good idea of the curve of the planes.)

shape which is generally used and which has been found to produce great lifting effect. The planes are constructed of two main frames, the outer ends of which detach from the center part. Light ribs are run above and below these frames and are held apart by blocks placed at intervals. The forward ends of the ribs are fastened to the front edge of each frame, while behind the rear edge, which they overlap about 18 inches, the ribs are secured together and slotted to receive a wire which passes around them and over which the cloth is stretched.

CURVE OF THE PLANES.

The covering of the ribs, both top and bottom, presents a smooth surface for the air to travel over and has been found to be more efficient than the other system used by Curtiss, shown in No. 5, page 566. In this arrangement the ribs are single and are laid upon the main frames and covered with a single layer of rubber-impregnated silk, which is laced to them in sections. The curve of the planes on the Curtiss machine, which is shown very well in the end-view of his Reims racer, is a good example of the parabolic curve that is said by some experimenters to give the greatest lift with the least drift,—or, in other words, the best lift with the least power required for propulsion. The fact that Mr. Curtiss made only 47



A REAR VIEW OF THE CURTISS RACER WHICH WON THE INTERNATIONAL CUP AT REIMS.

(One corner of the horizontal rudder is shown at the extreme left of the picture. The aviator's seat and the steering wheel are visible in front of the radiator. The 50-horsepower motor of the 8-cylinder V type carries a 6-foot propeller on its crankshaft. The gasoline tank is above the motor, the pipe leading to the carbureter being visible. The inclined bamboo poles running from the rear of the planes support the tail. The wires which operate the rudder run through the lower poles.)

miles an hour at Reims with his small 600-pound, 50-horsepower racer, as against the somewhat greater speed attained recently by Wilbur Wright when timed for a kilometer in a closed circuit with his 800-pound, 30-horsepower Government biplane demonstrates that the surfaces and propelling outfit of the latter machine are the more efficient. The Bleriot monoplane has a much deeper curve at the front edge of the plane than the Curtiss biplane, and while this does very well with a light machine at speeds up to 35 miles an hour, when an attempt is made to increase the speed the power needed is found to run up very fast.

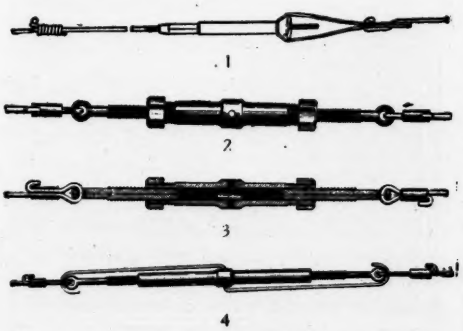
THE CURTISS BIPLANE.

The 25-horsepower Curtiss biplane, which is the standard, is the smallest, lightest, and most efficient biplane (as far as the proportion of useful load to total weight is concerned) yet produced. It is fitted with a double horizontal rudder in front and a single fixed tail-surface behind. Both are supported upon bamboo poles, extending some 10 feet to the front and to the rear. The aviator's seat is in front of the planes upon two inclined uprights extending from the rear edge of the upper plane down to the single front wheel. When seated the aviator has in front of him the vertical steering wheel, which he pulls toward him or pushes forward in order to go up or down, and turns in order to steer. The wheel is mounted upon a rod that extends forward to the horizontal rudder, while the tiller cable of the vertical rudder passes around the wheel in a groove and thence over pulleys and back through the bamboo poles to the tail. This method of protecting the tiller wires from the propeller is as simple as it is ingenious. The vertical rudder is split, half being above and half below the tail. A pivoted fork fits around the aviator's shoulders and is connected by wires to small balancing planes arranged between the main planes at their

ends. These are hinged upon the outermost front uprights. In making a turn, or when the machine tips to one side or the other, the aviator sets the balancing planes by leaning toward the center of the circle in one case and toward the high side in the other. The racing biplane shown has a sort of back to the seat arranged so it can move sideways. The Wright brothers have sued the Herring-Curtiss Company recently, alleging that the balancing plane method of controlling the transverse stability is covered in their patent on plane-warping; their French company has also taken action against the foreign infringers.

A SINGLE PROPELLER ON THE CURTISS.

The motor of the regular Curtiss machine is a 4-cylinder, water-cooled, light-weight gasoline engine of 25-horsepower, while that used on the Reims racer is of the 8-cylinder V type. The cylinders have steel water jackets. Gear water- and oil-pumps are attached to the aluminum crank case. A vanadium steel crankshaft is employed. The gas is supplied by a single float-feed carbureter. The Wright and Antoinette motors have pumps which inject the gasoline into the cylinders, but most aeronautic motors use a carbureter like that used on an automobile. The single propeller is mounted upon the engine crankshaft at the rear of the planes. It is about 6 feet in diameter, with 6-inch wide blades. Mr. Curtiss has recently tried a 4-bladed propeller with good results. Such a screw has a better flywheel effect, which is decidedly beneficial with a 4-cylinder motor when run without a flywheel, as in this instance. A flywheel is generally dispensed with when the propeller is mounted upon the crankshaft, but otherwise, except with 8-cylinder V-type engines, a light flywheel is fitted. The weight of the 25-horsepower Curtiss motor is but 97 pounds. With the radiator, water, etc., the weight is increased to 140 pounds.



TURNBUCKLES USED ON AMERICAN AND FRENCH AEROPLANES.

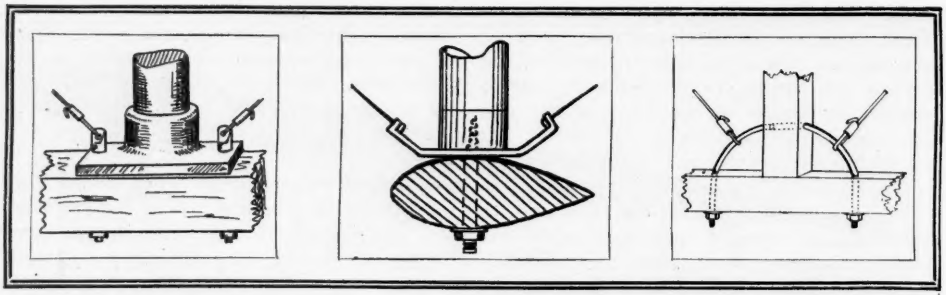
1, Curtiss; 2, Bleriot; 3, cross section of Bleriot; 4, Voisin and Farman type.)

INGENIOUS CONSTRUCTION.

The entire constructive work on the Curtiss biplane is excellent. The longitudinals and uprights are all made oval, and the latter taper toward the ends. The ribs are of 4-ply laminated wood, the outer layers being of ash and the inner of spruce. The latter wood is also used largely for the framework and braces throughout the machine. The planes of the 25-horsepower flyer are 28 feet 9 inches long by 56 inches wide from front to back, and they are spaced 56 inches apart. They are made up in sections which are readily detachable from the central part, which carries the engine and propeller, and is mounted upon three wheels. Numerous guy wires with turnbuckles for tightening suitably truss the planes. These are placed in every panel, both lengthwise and crosswise of the machine. A skid is attached to each end of the lower plane to protect it from breaking in case the end of the plane strikes the ground in alighting. One of the drawings shows the simple form of turnbuckle used on the Curtiss machine. This consists of a triangular piece of metal through a hole in the flat end of which passes the nipple of a bicycle spoke. The spoke screws into the nipple and thus provides the takeup of slack in the guy wire, one end of which is attached to the spoke and the other end to the apex of the triangular piece. When made by an amateur the triangles can be cut from a piece of steel tubing about 1 inch in diameter and ⅛ inch thick and hammered into shape afterward. The very best grade of tubing must be used, as otherwise it will crack when bent. Three other forms of turnbuckles used by the French aviators are also shown. In two of these eye bolts screw into the threaded body, which has a right-handed thread in one end and a left-handed thread in the other. The guy wires are attached to the eye bolts, which in one case have jam nuts on them for locking, while in the other a wire is passed through a hole in the center and hooked around the guy wire at the end.

HOW THE FRAME IS FASTENED.

Three other drawings show methods of fastening together the frame. The second

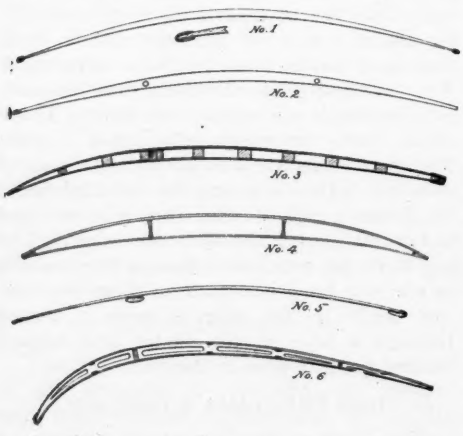


(Voisin aluminum socket.) (Curtiss method.) (Bleriot's improved joint and fastener.)

JOINTS USED IN ATTACHING UPRIGHTS.

shows a longitudinal fastened to an upright by a screw bolt in a machine of the Curtiss type, while the first shows an aluminum socket used for the same purpose. The upright fits into the socket, which is bolted to the longitudinal. Eye bolts are used so that the guy wires can be strung through the eyes. This form of fitting is used chiefly abroad. Another ingenious scheme employed by Bleriot consists of a horizontal wire run through an upright and having its ends curved upward or downward and passed through holes in the longitudinals. Nuts are put on the threaded ends of this wire. The diagonal guys are cut just the right length and are drawn as tight as possible. They run to the curved parts of the short wires, and when the nuts on the latter are tightened they are shortened sufficiently to tighten the guys.

Different forms of construction employed in building up the main planes are illustrated below. No. 1 shows the construction used by Vanniman, consisting of oval steel tubes for the longitudinals, with tapered slots cut in them to receive the wood ribs. No. 2 shows another form, in which wood ribs are strung upon steel tubes. No. 3 is a cross section of the Wright plane. The heavy front edge of the frame is seen at the right and the rear edge between two blocks near the left end. Ribs are laid above and below. No. 4 is a cross section of the wing of a monoplane machine built by the writer. The ribs are run over two I-beams and mortised into tapered front and rear edges. No. 5 is a cross section of the Curtiss plane and No. 6 of the Bleriot. The last named is very elaborately built up. The pronounced curve shown is at the front edge, which is made up of a U-shaped strip of aluminum, into which the ribs fit. These have thin vertical strips fastened to them, which are slotted and cut away for the sake of lightness. Other small longitudinal strips run lengthwise of each wing, as shown. Despite this elaborate construction, the weight of the complete wing is no less than another of the same size built by the writer.



CROSS-SECTIONAL DIAGRAMS, SHOWING CONSTRUCTION OF PLANES.

THE FARMAN TYPE OF AEROPLANE.

Passing to the machines of foreign construction, the Voisin biplane,—better known as the Farman machine, because Henry Farman made the first successful flights with it,—was the first to use a box tail,—*i.e.*, a tail made up of two superposed planes, with vertical connecting panels at each end. Originally the double-surface tail was not closed in at the ends, but after Farman and Delegrange found this to be a useful feature, the former next applied similar panels to the middle and ends of the main surfaces. Such panels appear to enhance the stability of this particular type of machine, although they, of course, make considerable skin friction and

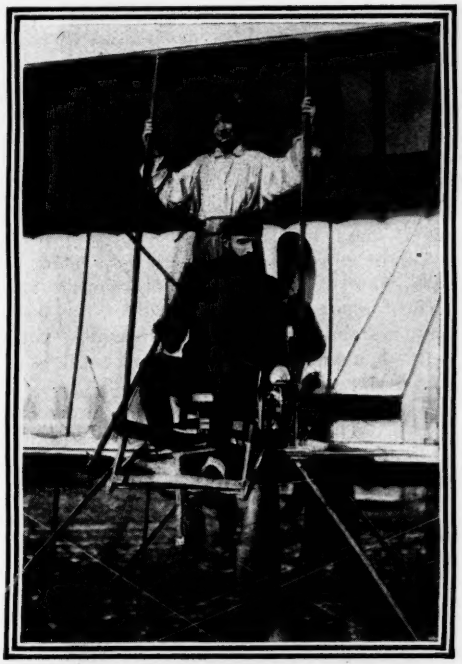
diminish its speed somewhat. In his latest biplane, which holds the endurance record of three and a quarter hours, Farman has dispensed with vertical panels in both the main planes and the tail.

A MOTOR WITH REVOLVING CYLINDERS.

The use of a revolving-cylinder air-cooled motor (which weighs only three pounds to the horsepower), because of the gyrostatic effect of its spinning cylinders, seems to give this machine a considerable amount of stability, while because of its high horsepower, with a relatively light weight, the large biplane upon which Farman uses it is speedy and has great weight-carrying capacity. At the wonderful aviation meeting at Reims, France, in the last week of August, Farman carried two passengers once around the 6.21-mile course in 10 minutes 39 seconds at an average speed of 35 miles an hour.

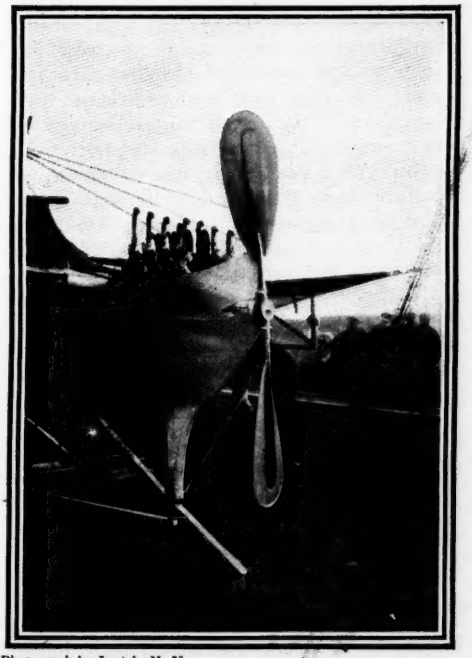
MONOPLANE MODELS.

While dealing with the foreign machines it will be well to describe the monoplanes. There are five different models of aeroplanes of this type making flights abroad at the present time. These are the huge *Antoinette* monoplane of Hubert Latham, the tiny *Demoiselle* of Santos-Dumont, the well-developed machine of Robert Esnault-Pelterie, and the two models, Nos. 11 and 12, of Louis Bleriot. A duplicate of Bleriot's No. 11, which is the machine that carried him across the English Channel, has been brought to America only recently and will be used to make exhibition flights.



THE CENTER OF FARMAN'S MACHINE, SHOWING CONTROL LEVERS AND RUNNER BENEATH.

(The lever in the aviator's right hand, when pushed forward or pulled backward, steers the machine up and down. When moved sideways it sets the wing-tips. Steering to right or left is done by the feet. The propeller is shown above and below the lower plane. Two cylinders of the revolving motor can be seen at the right.)



Photograph by Levick, N. Y.
FRONT END OF THE "ANTOINETTE" MONOPLANE.

(Showing motor and direct-connected propeller. The buffer below protects the propeller when the machine strikes the ground at too great an angle.)

The *Antoinette* monoplane has been developed during the past three years by M. Levavaseur, the inventor of the light-weight motor of the same name. Like so many other inventors, Levavaseur started out to build an aeroplane and ended by designing a light-weight gasoline motor. This was named after Mlle. Antoinette Gastambide, the daughter of the capitalist who backed him. After his motor had been used successfully in motor boats and upon the flying machines of other inventors, Levavaseur at last was

able to build a machine of his own upon which to try it. This has passed through several stages of development before reaching its present form. As it is now built this birdlike machine consists of a pair of wings mounted with a slight dihedral angle (upward inclination of 1 foot in 12) upon the forward part of a long tapering triangular body. The front end of this body has a sharp boatlike prow made of wood, on top of which is mounted an 8-cylinder, V-type, water-cooled motor. Horizontal and vertical planes at the rear end of the body form a stabilizing tail. The rearmost parts of these planes are movable and form horizontal and vertical rudders.

The spread of the wings and the overall length, from front to back, of this machine is about 40 feet, while its weight is over 1100 pounds. The supporting surface is 323 square feet, making the load carried per square foot 3.4 pounds. With a 50-horsepower motor it develops a speed of 45 miles an hour. On the latest machine exhibited at the aeronautic salon at Paris a 16-cylinder V-type motor of 100 horsepower was fitted.

SANTOS-DUMONT'S UNIQUE CONSTRUCTION.

Santos-Dumont's "baby" monoplane is the exact opposite of the "Antoinette" in size and weight, although as far as speed is concerned it is superior. Of slight weight and stature himself, Santos-Dumont has tried to construct the smallest, lightest, and fastest flyer that will suffice for his personal needs. The result is the tiny machine illustrated. So small is this flyer that its owner is able to carry it about the country on a platform on the back of his automobile when he does not wish to take the air route. He has recently made some astonishing cross-country flights, in the course of which he landed at will upon the grounds of one of his friends,—and ran his machine under a shed to avoid getting caught in a thundershower. After the shower was over he again got out the monoplane and flew back home.

FASTEST AND LIGHTEST OF FLYING MACHINES.

After experimenting with both air-cooled and water-cooled motors of the double-opposed-cylinder type Santos-Dumont has recently had built, by the Darracq firm, a new light-weight water-cooled motor of this type, which weighs but 110 pounds and which is capable of developing 30 horsepower. This particular type of motor adapts itself very nicely to a light monoplane, since it can be placed upon the front edge of the wings at their line of juncture and with the propeller mounted upon its crankshaft. The magneto is placed on top of the crank case and driven by enclosed worm gears. A narrow vertical water tank and a torpedo-shaped oil tank are placed just back of the motor. Radiators of small, thin metal tubes are laid along the under surface of each wing, a couple of feet out from the center. The tubes extend from the front to the back edge of the wing and conform to its contour. After passing from the top of the water jackets to the top of the tank the hot water descends through the latter and thence passes up through the radiators to sharp-edged headers at their upper ends, whence short pieces of rubber hose convey it to the lower ends of the copper water jackets. A gear water-pump, mounted on an extension of the magneto shaft at the rear, sends the few quarts of cooling water carried through the radiators at a rapid rate. The propeller used is a two-bladed one, about 7 feet in diameter. The engine turns it 1800 revolutions per minute. It develops 242.5 pounds thrust and is said to drive the monoplane at a speed of 55 miles an hour.

This is quite the fastest and lightest successful flying machine ever constructed. Exclusive of the motor it weighs only 132 pounds. It has 96.87 square feet of supporting surface and, with Santos-Dumont on board, weighs but 352 pounds complete. The weight carried per square foot of surface is, therefore, but 3.6 pounds. This is a low figure for a monoplane. The placing of the aviator's seat 2½ to 3 feet below the plane counteracts the high position of the motor and makes the center of gravity of this machine somewhat lower than it is on most monoplanes. This, in additon to the slight dihedral angle of the wings, gives the machine such good lateral stability that Santos-Dumont has been able to carry aloft a 40-pound weight attached at a point a foot or more to one side of the center, and to drop this while in flight without the stability of his machine being affected. He has also flown with his hands off the control levers.

THE BLERIOT MACHINES.

M. Louis Bleriot has been experimenting in the new science of mechanical flight longer than any other living French aviator. In 1906 he made successful and exceedingly daring flights in a Langley type aeroplane. This consisted of two planes, one 15 or 20

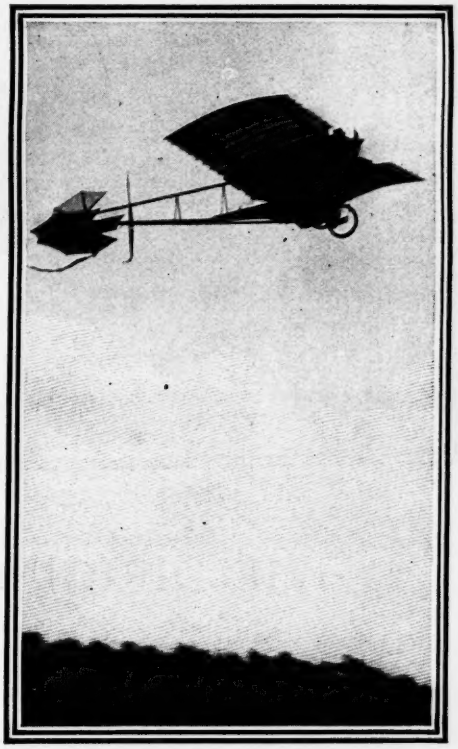
feet behind the other, on a long central body. Bleriot found he could reduce the second plane until it became simply a tail, and in this way he changed Professor Langley's design into a monoplane. He made a number of excellent flights a year ago with his No. 8 and No. 9 machines. These had wing tips on the ends or at the rear edges of the wings for maintaining the transverse stability. The first of the present year he brought out his No. 11 monoplane, in which the transverse equilibrium was maintained by warping. This is his most successful one-man machine.

The No. 12 is somewhat larger and differs from the No. 11, principally in having the motor set low in the body and arranged to drive the propeller at the front edge of the plane by a chain.

A NOVEL STEERING MECHANISM.

The great feature of the Bleriot monoplanes is the patented steering device. This consists of a very small wheel on top of a short shaft, which is mounted upon a universal joint. Just above the joint is a bell-shaped aluminum casting, to which run the wires from the horizontal rudders, and also two wires from a short lever forming part of a pulley and located on a tripod below the body. A wire cable extends down from a point near the outer end of the rear longitudinal beam of each wing and is wound tightly around the pulley. When the steering post is swayed to one side or the other the pulley is turned slightly, causing the cable to pull down on one wing and let up on the other. A second cable passing over a pulley in the brace above the body exerts an upward pull on one wing as its end attached to the other wing is drawn down. When the machine tips to one side or the other the aviator has only to swing the wheel to the high side in order to warp the wings and bring it back to an even keel, while in order to go up or down he pushes the wheel away from or draws it toward his body. The vertical rudder is turned to right or left by the feet, which rest upon a pivoted crosspiece like that used in steering a bobsled. In making a turn the machine is tipped slightly inward by warping the wings.

The Bleriot monoplanes are mounted upon two wheels in front and one at the rear. Both front wheels are fitted with shock absorbers, consisting of elastic rubber rods, which are placed in tension and stretch when the wheels strike the ground. The power plant of the No. 11 consists of a three-cylinder Anzani air-cooled motor of 20 horsepower, with a 7-foot propeller mounted upon its crank shaft, while the No. 12 machine has a 35 horsepower water-cooled motor of the 8-cylinder V-type, driving the propeller by means of a chain. This latter machine has carried as many as three people at a speed of 35 miles an hour, the total weight lifted in this instance being 1234 pounds. The No. 22 machine of this type, fitted with an 80-horsepower motor, made the fastest time at Reims, covering 6.21 miles in 7 minutes 47 4-5 seconds at an average speed of 47.78 miles an hour.



SANTOS-DUMONT IN FLIGHT IN HIS TINY MONOPLANE.

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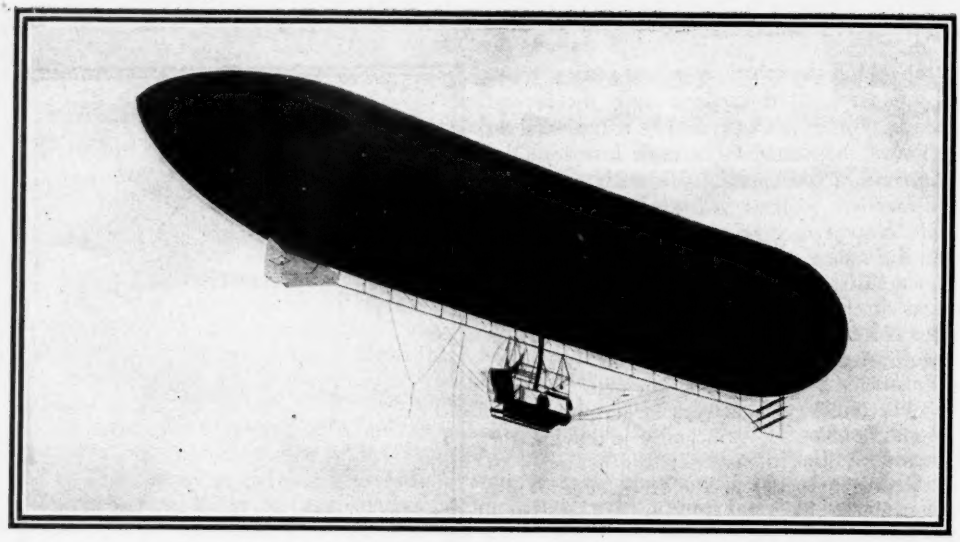


THE MODERN DIRIGIBLE IN FULL FLIGHT, RUTHENBERG TYPE.

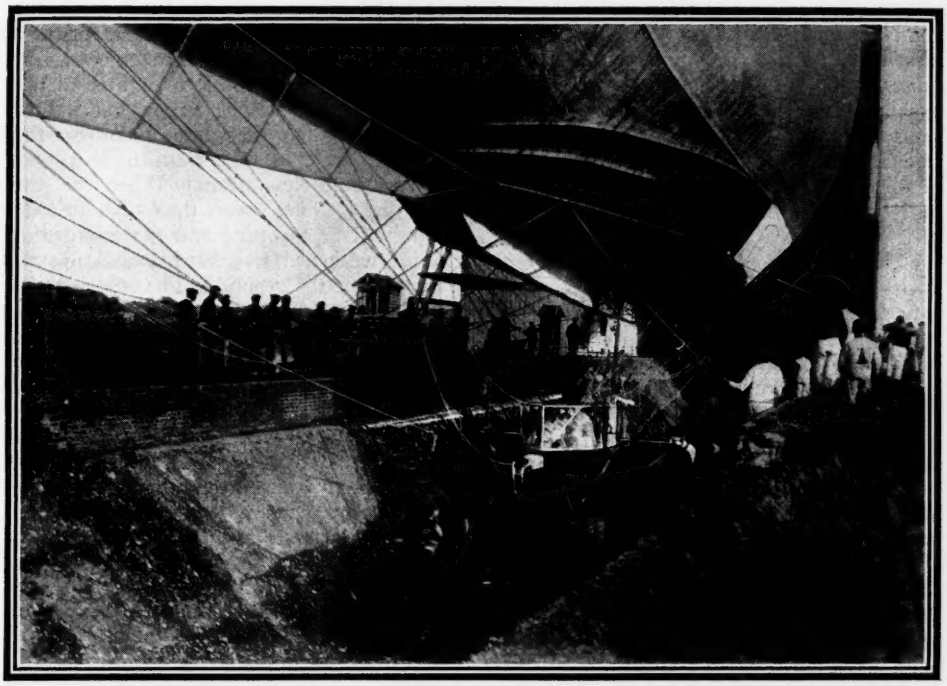
THE DIRIGIBLE OF TO-DAY.

THE CONSTRUCTION AND PERFORMANCES OF THE "LIGHTER-THAN-AIR" FLYING MACHINES.

BY T. R. MAC MECHEN AND CARL DIENSTBACH.

THE well-known voyages of Count Zeppelin's airships of his name, of which there is a record of more than 200, have ranged from one hour to 36 hours and covered distances of 50 to 900 miles. The ship has always returned to her sailing port at Friedrichshafen within three days, the time of the longest voyage. All the new improvements in airships that give an idea of what may be expected are those developed in this "rigid" dirigible. That greater improvements are projected is seen in the preparations for carrying passengers over Germany; such a service will begin next year. More than four million marks have been subscribed by private individuals to the enterprise of the Zeppelin Company. That the undertaking is perfectly practical will be understood when it is known that during the past summer the *Zeppelin III.* repeatedly carried fifteen passengers and a crew of six on voyages of 200 miles in less than seven hours. It was done with two motors of 150 horse-power, which drove the craft at an average speed of 35 miles an hour. Now, the *Zeppelin III.* is very little longer and not much greater in circumference than the *Zeppelin II.*, which has transported twenty-seven passengers for over two hours. The difference in their sizes shows at once how rapidly the carrying capacity and the radius of an airship's action increases with any enlargement of the hull. As a development of that fact two larger ships, the *Zeppelin IV.* and the *Zeppelin V.*, are being constructed at Friedrichshafen, at the point of buoyancy and speed which will enable them to carry thirty passengers from Frankfort to Berlin, a distance of about 280 miles in an air-line, in about seven hours. These ships will be approximately 480 feet long, with a beam of about 50 feet, and carry two motors, each of 200 horse-power.

Trips of that nature will be possible for any dirigible with a permanently taut hull, especially in view of important improvements now being made in these new Zeppelins. Recent discoveries by Professor Hergesell, of Strassburg University, and other German scientists give an entirely new aspect to the practical possibilities of the airship. For instance, a way has been found to always hold the airship's supply of gas at its normal lifting power by preventing any change in its temperature. It is accomplished by turning the hot exhaust from the motors into the

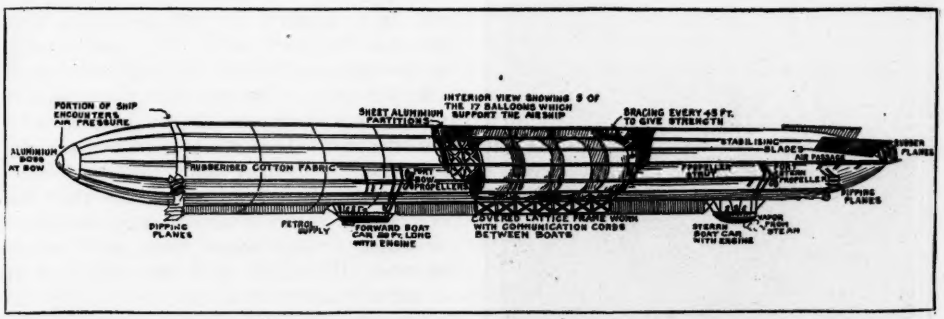


UNDER THE HULL OF THE FRENCH MILITARY DIRIGIBLE "LA REPUBLIQUE."

(The broken propeller ripping the bottom of the hull allowed the gas to escape, thus causing the wreck of *La Republique* on September 25, in which four men lost their lives.)

inside space surrounding the gas-chambers. Ventilation is thus furnished, which counteracts heat produced by the radiation of the sun; the air-space is also kept at an even temperature, in which the gas does not shrink or lose its power to keep the ship afloat. To avoid setting fire to the hydrogen in the chambers any unexploded gases in the motors' exhaust are burned in an asbestos furnace before they pass into the hull. The ship's radius of action will thus be limited only by the supply of fuel it can carry; the new plans provide for saving the fuel.

Airships designed for offensive military operations will be designed larger than those built for commercial purposes, because they



EXPLANATORY DIAGRAM OF THE ZEPPELIN AIRSHIP.

(This drawing, which is reproduced from "Aerial Navigation of To-Day," by Charles C. Turner, gives a very clear idea of the construction of the famous dirigible balloon which has remained for some time the only rigid type extant. The object of dividing the gas into seventeen compartments was to retain the vessel's efficiency even should one part of it become disabled.)

must navigate at greater altitudes to be beyond the point-blank range of artillery fire. The reason for enlarging them is that they must have more space in which the gas can expand when they rise into the lower air-pressure of the higher regions. An airship intended to make an attack will fight from 1650 yards for its own protection, but it must watch the fluctuation of its gas-supply. It is perfectly feasible to do this by inflating the chambers to only a fraction of their capacity before ascending; this provides for the expansion of the gas to its highest lifting capacity at the very time it is in the midst of an engagement. The ship is so large that, with the assistance of the horizontal rudders, it can lift its full complement, without losing stability or speed. Its attack will always be rapid and of short duration because of the effective execution it may be expected to wield with the guns that have been developed by the Krupps for the use of airships.

There is still another feature of the aerial battleship that is being considered in Germany. It is the motor which is being changed to operate at altitudes above 1650 yards. The present motors used in all airships were built to operate on the ground; all of them begin to lose power at high altitudes. This has called for motors that can operate in rarefied air; the new type which is now being developed will have larger cylinders to perform the same work that smaller cylinders do on the ground. The explosions of rarefied charges are less violent than normal explosions, consequently the motors of the war airship will be lighter in weight for their horse-power as compared with those working on the ground. Built of lighter metal, the aerial motor will be larger, but lighter and weaker, than the same motor on the ground, because in higher altitudes it will be subjected to less strain. When the airship descends under power these high-altitude motors will be throttled and the mixture of gasoline weakened so that they will not fly to pieces near the ground. The scouting airship will be able to avoid straining either the gas or the motors, since it can operate at much lower altitudes, because this type of airship, entirely distinct from the fighting craft, can make its observations from greater distances than if it were maneuvering to make a well-directed attack.

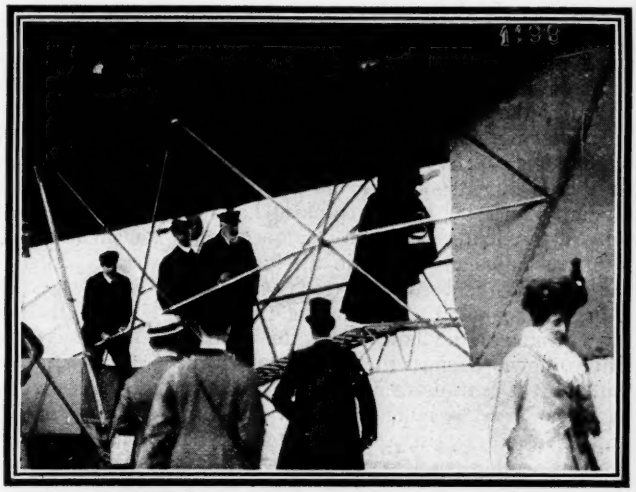
ONE OF THE PROPELLERS ON THE "ZEPPELIN III."

The highly developed modern airship in Europe presents no such appearance as the small American dirigible; it does not bob up and down and experience difficulty in keeping a straight course. It is heavier and larger and cannot be tossed about by winds which affect the largest type of American airship. If the power that is applied to drive one of these large ships,—even that of a motor of 80 horse-power,—was crowded against the short length of a lightly built American dirigible it would buckle in the center despite perfect tautness. Yet non-rigid and semi-rigid ships, such as the *Republique, Parseval,* and *Gross,* are operating with 200 horse-power solely because of the size and strength of their hulls.

Recent achievements of the airship have been entirely due to the development of its hull along the lines of inertia and momentum of great masses. Though lighter than air, the Zeppelin is so massive that it has the inertia of a wooden log whenever the ship heaves to in the wind. Its propellers slip for five minutes before they start the huge bulk; but once under way the momentum of its long heavy body overcomes any resistance from the air. The Wrights have used the same principle in their flying machine. Voyages by the Zeppelin have shown that the very largest hull will safely carry the heaviest loads, at high speed, over the greatest distances. This is so clear that designers of all other types of dirigibles are steadily increasing the size of the hull, and with it the power of the engine.

The modern dirigible has either a solid hull stuffed with gas bags or a single balloon hull that collapses when its vents are

opened for the gas to escape. They are rigid and non-rigid airships. Up to now the Zeppelins are the only rigid ships of the air. *Parseval III.*, invented by Baron Parseval, of Germany, and the *Ville de Paris,* now in the service of the French Government, are the most successful non-rigid dirigibles. After a flabby craft of that type has been stiffened with a frame stomach it becomes semi-rigid, a purely French style, highly developed in *La Republique,* which was recently destroyed. The *Gross II.* is the only semi-rigid airship in German military service; it has slight advantages over the French type from which it was copied. That completes the list of great airships which have contributed to the most recent progress of the dirigible. An intelligent idea of what they promise for the future will be gained by understanding their different construction.



PASSENGERS BOARDING THE CABIN OF THE "ZEPPELIN III."

Now it is impossible for an engine to drive a spherical balloon; its lighter gas bag will always be either ahead or behind the loaded car. The reason is simple. It is because of the irregularity between the driving force of the engine and the resistance of the air. The basket begins to swing like a pendulum. A non-rigid dirigible acts in the same way when the car is suspended far beneath the gas bag. If the car swings, the sharp point of the bag is tilted up; instead of the point cutting through the air, the bag drags through the air with its belly. This being the type of the standard French dirigible, it becomes a compromise between a real ship and a balloon. A balloon is the reverse of a ship. To offset the pitching of the hull, French builders adopted the frame stomach, which permits carrying elaborate devices,—stabilizing or steadying fins of metal frames and canvas surfaces. They keep the hull in a horizontal position while in flight. The car is suspended closely to the edges of the rigid stomach, which prevents it from swinging. Vertical rudders, fastened at the extreme rear end of the stiffening frame, turn the craft to right or left. Other horizontal and vertical planes sewed to the stern of the balloon also assist in keeping it on a level keel. An aeroplane effect is obtained in this way, the balloon being converted into a flying-machine. Tilting the planes downward, so that the air-current strikes the top of the planes, sends the airship toward the earth at steep angles. Elevating the planes, to permit the air to strike them underneath, sends the ship skyward. When the craft is being driven at a certain speed the aeroplane rudders are given a lifting force that carries the ship up faster than the buoyancy of its gas.

These navigating devices act perfectly and go far toward solving transportation by air, except for the most important consideration in managing a dirigible. This is the gas, the chief supporting power. Its buoyancy constantly changes with the alternate heating and cooling of the atmosphere. The sun's heat expands it; the shadow of a cloud causes it to shrink. In a non-rigid dirigible even the horizontal aeroplane rudders cannot prevent the ship from rising on a hot day above the level where its lifting power and its own weight are balanced.

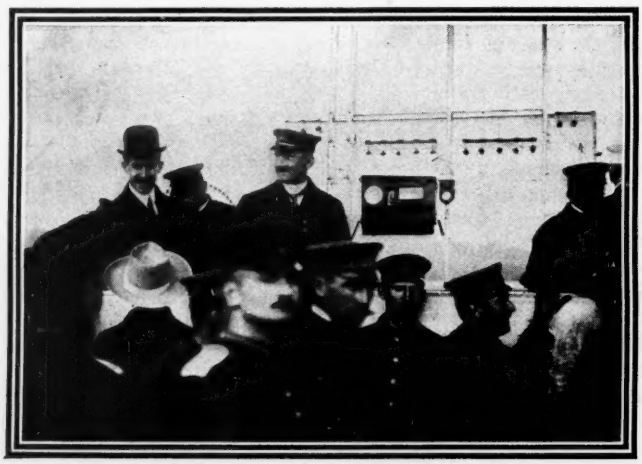
Though the Parseval is a simpler adaptation of the ordinary balloon than the French airships, it is more remarkable, because it is probably the last extreme of ingenuity man will ever reach in trying to convert a balloon into a ship. This masterpiece of engineering science is merely an elongated balloon tapering from an egg-shaped bow to the stern. It is the only dirigible that can be packed into a small space like a spherical balloon. Stabilizing fins and rudders of cloth sewed

directly to the hull only reveal their true purposes after the bag has been inflated. Even the propellers are cloth, stiffened by frames of light steel tubing; they hang shapeless until the steel arms that carry them begin revolving. Then the cloth blades stand out suddenly like the fingers of a glove that have been blown taut. In the place of stabilizing planes the ship is trimmed horizontally by pumping an equal amount of air into two balloonets placed in the interior of the hull, at the bow and stern. Pumping a greater amount of air into the front balloonet inclines the bow; then the craft is driven down against the buoyancy of the gas. But it must move in spirals to descend, because the car is hung far below the hull. In other words, its center of gravity is very low.

This car weighs 5 tons and carries a mass of machinery, which includes two motors, each of 110 horse-power, and having six cylinders; there is also a centrifugal pump for supplying air to the ventilator that serves the balloonets.

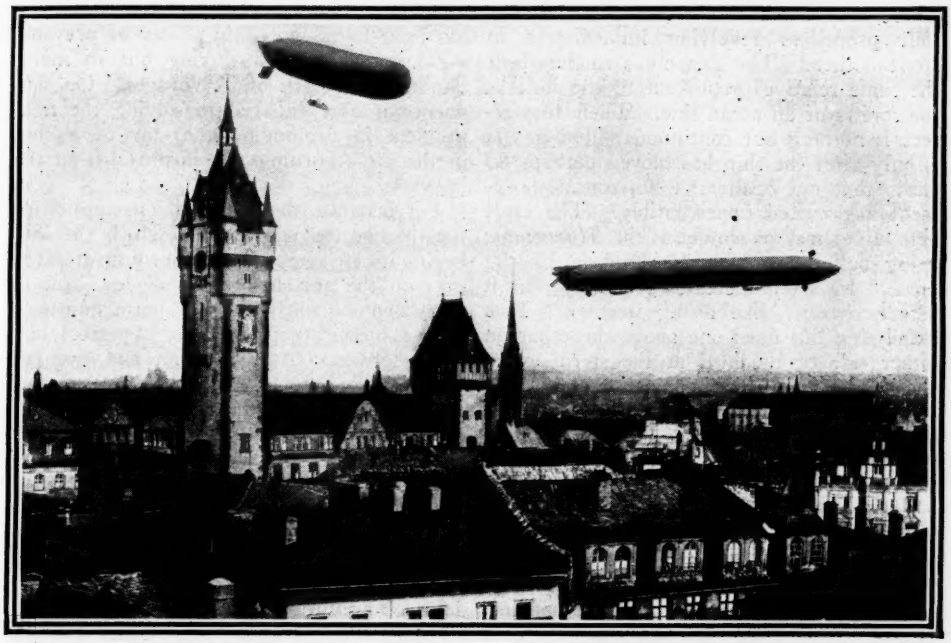
The definite purpose of the modern dirigible is to carry useful loads over great distances, but this cannot be done unless the supply of gas is kept at its normal buoyancy, exactly as the ocean liner's is fixed, that it may not only float but make voyages on nearly a time schedule. Navigators of airships have no idea of becoming balloonists. Their idea is a craft that will behave like a ship on the water. The Zeppelins are a great advance in that direction; their designer threw overboard all "flabby" construction. He built a solid ship filled with gas chambers. Packed away in its hold as storage, they are protected by the air-space between them and the outer hull from the force of air-currents and from changes in the sun's radiation, which exhausts the gas. It has resulted in a near approximate to a fixed supply, sufficient lifting force having been retained in the chambers for more than three weeks. This fact explains Count Zeppelin's long voyages. Inclosing these gas bags within the hull eliminated the rocking of the gas, which makes the progress of the airship so uncertain; consequently it is not necessary to strain the gas bags by blowing them up with air-bladders. The entire absence of this internal pressure, which diminishes the lifting force and subjects the envelope to tension, has kept the gas bags so tight that they hold their supply to a higher degree than ever heretofore. All this means wonderful economy of effort, a greater radius of action, and a longer time of usefulness.

In discarding the flexible hull of all other air-craft the intention was to carry a useful load of 4 to 5 tons, according to the sizes of the ships then designed. The cylindrical hull was fashioned on straight lines, because practice proved that straight lines in an airship gave greater speed and stability in the air than curves; the craft was easier and less expensive to construct, since the front and rear halves were exactly alike. The lengths of the hull were limited to 410 and 445 feet in the sizes that have been constructed, thus avoiding danger of dislocating the skeleton, which has a buoyancy of 12 to 14 tons. There are seventeen drum-shaped compartments inside the aluminum skeleton, which is built of many octagon metal rings joined by heavy wire cables and a mass of lighter bracing. A weatherproof skin or envelope of the toughest balloon cloth encases this skeleton. Each gas-compartment is entirely separate and is inflated independently, like the watertight compartments of the ocean liner; if one or more of these compartments burst or were perforated



THE BRIDGE OF THE "ZEPPELIN III." CAR.

(The switchboard for directing operations is seen in the rear.)



"ZEPPELIN III." AND "PARSEVAL" OVER THE CITY HALL OF FRANKFORT-ON-THE-MAIN, GERMANY.

by a missile the chambers remaining intact would prevent the ship from sinking until ballast could be cast overboard, thus restoring the lost buoyancy.

A remarkable confirmation of precisely such an accident was seen in what happened to the *Zeppelin III.* and *La Republique* in September; it reveals the action of the rigid and non-rigid dirigible in case of the same mishap during either war or peace. With the bursting of *La Republique's* propeller, one of its flying blades passed like a missile through the hull. What happened was practically an explosion. The internal pressure of the air balloonets on the single envelope holding the gas tore the wound larger than the puncture made by the blade; the entire volume of gas blew off like steam from a bursting boiler, instantly leaving the heavy car and frame stomach without any support. It crashed to earth like a rock. At the time of the accident the ship was so low (300 feet) that its crew might have had time for a reasonably safe landing,—even in case of fire. Exactly the same accident happened to the *Zeppelin* on its recent return from Berlin to Friedrichshafen. The broken blade of a revolving propeller was hurled through the hull and punctured one of the seventeen gas chambers; the ship did not make an immediate landing because even after the ruptured chamber was empty the sixteen remaining cells kept the craft afloat. The percentage of lost buoyancy was made up by dynamical support from the motors and by inclining the horizontal rudders. The ship flew 50 miles until it arrived over a town where there was material for repairs.

In building its hull on the lines of a submarine the designer immediately removed many puzzling problems that belong to the balloon; it permitted the use of rudders having greater efficiency than those on any other type of dirigible. Four horizontal rudders fore and aft on each side of the hull are simply elementary flying machines with three decks; they allow the long axis of the ship to instantly incline either up or down. What is of greater importance to the question of saving the buoyancy is that they raise and lower the ship entirely by their aeroplane effect. Their lifting effort is more than a ton. The action of these rudders alone has raised the ship 1950 feet into the air, taking the place of casting more than 1200 pounds of ballast from a balloon. Although small in comparison with the hull, its stiff frame permits the rudders to stand out from the craft,

where they catch the strong current from four propellers revolving immediately in front of them. The Zeppelin's rudders bear the same relative proportion to the hull as the screws of an ocean line. Their first effect is nothing but continuous slipping. It is only after the ship has moved perhaps 80 yards that one realizes a horizontal movement has started imperceptibly. The craft gets under way as slowly as the *Mauretania* being pulled out into the Hudson by tug boats. Its speed increases gradually, but it recedes exactly like a big steamer. Two stabilizing fins fixed one above the other on either side of the hull at the stern act as the feathers of this immense arrow; they send the ship forward without the slightest deviation from the line of horizontal flight.

A single vertical rudder, simply a box-kite, is hinged between each of these sets of fins; all of the steering to starboard or larboard is done by them. Another large vertical rudder fastened directly to the stern remains immovable during flight, being used as a stabilizing fin to keep the ship on her true course. Aside from the motors and the cars, which are hung nearly 200 feet apart in the exact centers of gravity, this is the equipment of the most successful airship. Many steering wheels controlling the rudders are placed in the forward car near the navigating table. Two motors of 200 horse-power, one in each car, furnish the energy which drives the ship.

Other new devices make the equipment of the dirigible of to-day more certain than ever of fulfilling its task. Prof. H. Erdmann has invented a practical method of transporting liquid hydrogen in compact reservoirs aboard airships for a week at a time. The weight does not add anything material to the cargo. Losses of gas from the great chambers which support the ship can be replenished; two chambers can be wholly refilled from one reservoir. The ship need not descend to repair a chamber that has burst or has been perforated by a missile. All necessary material for performing this work will be carried aboard; the interior of the hull affords a suitable workshop, and during the progress of re-establishing the ship's lost buoyancy the decreased lifting power will be made up by the lifting effort of the aeroplane rudders. In the new discovery has been found not only a way of preventing an airship from sinking but in maintaining the length of its voyages. German science is now engaged in solving the final problem in prolonging the stay of a ship in the air,—burning the surplus lift in the buoyancy.

For instance, the constant consumption of fuel lessens the weight with which the ship begins its voyage. As this burning of cargo goes on the gas chambers have less load to carry; consequently there is more buoyancy than is necessary to preserve a perfect balance between lifting power and weight. This is called the "surplus lift" in aeritime navigation. It has the effect of taking the airship up into thinner air, where there is a corresponding loss of lifting power and serious interference with the straight line of flight. Commercial operation of the craft demands that such a contingency must be overcome. Those who are laying the plans for this use of the airship believe they have found the solution. It is nothing more than drawing the "surplus lift" from the gas chambers and burning it as fuel for the motors. Hydrogen is highly inflammable and makes a good fuel. Whenever there is more gas in the chambers than is needed to keep the airship on a level keel, it could be drawn from the bags until the over-buoyancy was reduced. Theoretically, it is entirely feasible, and the evidence at hand seems to justify the expectation that a practical method will soon be found. As a development of the future it finally provides the airship with every qualification for perfect navigation that is possessed by ships on the water.

Commanding appliances that give greater motive power, higher speeds, and the ability to remain in the air for days instead of hours, the aerial man-of-war of the air-liner becomes either the most formidable engine of destruction or the most wonderful vehicle of travel that has been devised by man. The airship will soon have met every obstacle to complete conquest. Its range will be limited only by its size. The same reasons that have impelled nations to build *Dreadnoughts* and *Mauretanias* apply exactly to air-power, and point unerringly to stupendous machines.

HOW IT FEELS TO FLY.

BY F. A. COLLINS.

WE have no higher praise for any rapid or exhilarating locomotion than that for the time we have seemed to fly. The delights of flying are, of course, proverbial; they are even promised as a special reward in a future incarnation. A prayer for "the wings of the dove" has anticipated the aeroplane by many centuries. Actual testimony as to the long-coveted sensation is now for the first time available, and we have the assurance that our hopes are fully realized. While the number of aviators who have returned to us from the upper air is limited, their testimony, nevertheless, lacks nothing of enthusiasm. We have the impressions of expert mechanicians, who are naturally close observers; of laymen of widely different temperaments, including a distinguished novelist; even of royalty,—certainly a very catholic company.

WILBUR WRIGHT'S SENSATIONS.

"Flying is the greatest sport in the world," was Mr. Wilbur Wright's comment. The question as to his personal experience aroused him from his habitual reserve. "I can't describe the sensation," he continued; "I can only define it by comparison with more familiar experiences. It is like sledding, like motoring, like sailing, but with increased exhilaration and freedom.

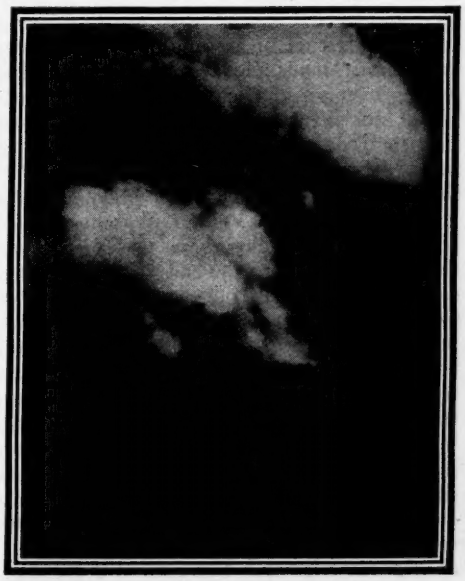
"An aeroplane flight, contrary to the general impression, is far steadier than the familiar means of locomotion. There is absolute freedom from the bouncing of the automobile, the jar of a railroad train, or the rolling and pitching sensations of the sea. No matter how many springs or cushions may be added to an automobile, for instance, there will always be some motion. On the other hand, the seat of an aeroplane is always steady. The aeroplane does not jolt over the invisible wind currents, the ruts of the sky. It cuts its way smoothly. Even suppose the plane to be gliding so [indicating an angle of forty-five degrees], the seat remains fixed. There is, of course, no absolute parallel in surface travel. And since there is no roll or pitch to the aeroplane, there is no air-sickness comparable to the familiar seasickness."

All aviators seem unconscious of any element of danger. Even among the passengers no one has confessed even to nervousness during the flights. Once aloft the exhilaration of the exercise banishes every fear. Mr. Wilbur Wright has flown with many passengers both here and abroad.

"After the first flight one has no thought of possible accident," Mr. Wright explained. "In all my flights I have never known a passenger to be frightened. One of my passengers, I remember, was greatly disturbed for fear that, in our downward drive, we would hit a man who happened to be in the way; but he was a beginner and did not understand the control of the machine. One soon becomes accustomed to the levers and finds plenty of time to look about and enjoy the flight."

A PASSENGER'S REPORT.

The first comment of the aviators and their guests on alighting has been enthusiastic praise for the new sensation. All seem agreed that it is incomparable. The testimony of Lieut. Frank P. Lahm may be cited as a typical instance. Lieutenant Lahm is doubtless the most seasoned of aeroplane passen-



CLOUDS AS SEEN FROM ABOVE.

gers, besides being a balloonist of considerable experience.

"I have seemed to be floating on an element more liquid than air," said Lieutenant Lahm. "I felt something of the same soothing sensation while reclining on the deck of a fast ship on a perfectly calm sea. The sensation may be compared to coasting down hill on a bicycle, but without the fear of a cropper. The perfect smoothness of the glide of an aeroplane, however, is far more delightful than any similar experience.

"The flight of an aeroplane is so steady, so free from vibration, that one loses all sense of motion. Much of the time during these flights I have had the impression that we were standing still and that the earth and sky were gliding past. One of the most surprising things about an aeroplane flight is the way the time seems to fly. Except that my legs have grown stiffened from sitting in the same position I have had no idea of the passage of time. I have been up more than an hour when it seemed but a few minutes."

Several aviators have remarked the peculiar and somewhat awe-inspiring effect of passing swiftly above the heads of crowds, particularly when the faces are upturned, as is likely to be the case. It will come as a surprise to most laymen to learn that conversation may be carried on with the earth up a height of 2000 feet, or even more. The aviator as he rushes along may hold fragmentary conversations with hundreds of people.

"The presence of a crowd," said Lieutenant Lahm, "lends new zest to the flight. In passing over great groups of upturned faces, say at an elevation of sixty feet, it is possible to recognize people, to pick out a particular face, without the slightest effort. The cheering comes up to one deafeningly. When I accompanied Mr. Wilbur Wright on his record-breaking flight there was plenty of cheering, but toward the end of the hour the crowd became silent. We glided over the great crowds again and again without a sound reaching us. When the little clock before us told that we had passed the best previous record a great wave seemed to move over the sea of faces and the cheers and automobile horns raised an awful din. Such applause coming up to us from so unusual an angle was a sensation never to be forgotten."

In its present stage of development the whirring noise of the aeroplane propellers is an important factor. The noise is deafening. Conversation is practically out of the question. Doubtless in time this will be remedied. An incident of Lieutenant Lahm's trip at Fort Myer will give us an interesting glimpse of the life aboard an airship. Just before the close of the hour which marked the best previous record Mr. Wright turned to his guest and shouted:

"I'm going to try for the record!"

The two passengers sat side by side, not more than two feet apart, but Mr. Wright was obliged to repeat the remark twice at the top of his voice before he was understood.

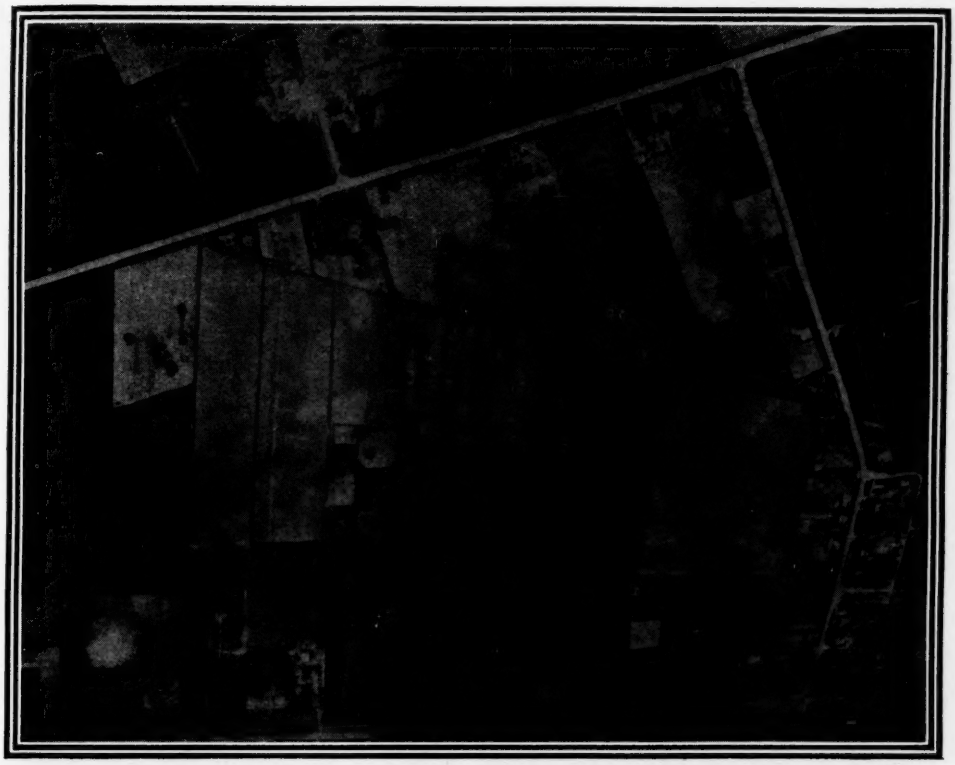
THE DELIGHTS OF AEROPLANE FLIGHT.

"One has not lived until he has flown," is Mr. Glenn H. Curtiss' conclusion. Equally enthusiastic is Mr. Curtiss' partner, Mr. A. M. Herring. "The smooth glide of an aeroplane is incomparably the most exhilarating sensation in the world," said Mr. Herring. "You have the impression of moving with a swallow's swiftness, of overcoming every obstacle without the slightest effort. You literally float over the earth. You gain something of this sensation in motoring under very favorable conditions. The car seems to carry you over hills, for instance, while you recline inert,—relaxed. On an aeroplane you have this sensation raised to a higher power. The sense of freedom in being free above the earth and in rapid motion and without support of any kind is indescribable.

"The gentle rocking of an aeroplane as the wings cut their way through the air currents again is a delight. I can imagine a person extremely sensitive to seasickness affected by this motion in a long flight. We may have air-sickness just as to-day we have seasickness. The undulating motion of the aeroplane and the pitch and roll of a ship at sea are not dissimilar.

"There is endless variety in an aeroplane journey. The aviator learns to make an entirely new set of observations. Much depends upon the air currents, and the aviator must learn to read the signs of the sky. He must anticipate the approach of an air current by observing its effect on the tops of distant trees or the surface of bodies of water. The direction of any floating smoke on the horizon or fog or mist gives the pilot the direction and force of the wind."

Aviators are already divided as to the comparative merits of aeroplane and balloon flights. What endless discussions are not foreshadowed? The preference for one form of aviation over another is largely a matter of temperament. Lieutenant Lahm, himself



PEMBERTON, OHIO, AS SEEN FROM THE UPPER AIR.

an experienced balloonist, is loud in praise of the aeroplane.

"For the first time in my flights," he said, "I had the impression that I was actually covering ground. From a balloon the earth seems to drop away. You seem to be standing still while the cities pull themselves together and disappear. The aeroplane, since its flight parallels the ground, gives one an entirely different sensation. There is an exhilarating sense of progress. Then, again, a balloon trip is made in silence, while from an aeroplane you are constantly in touch with the earth."

ADVANTAGES CLAIMED FOR THE DIRIGIBLE.

The balloon has an enthusiastic champion in Mr. A. Leo Stevens, whose conclusions are drawn from very wide experience. Mr. Stevens has made more than 1700 gas flights, and has taken aloft ten times as many passengers as any other sky-pilot, licensed or otherwise.

"There is a sense of freedom and of quiet progress about a dirigible balloon flight," said Mr. Stevens. "A dirigible flight gives you ample time to enjoy your journey. You float along at a comfortable fifteen miles an hour or so, and the great panorama beneath you unfolds itself gradually. You have time to enjoy the marvelous scene and the curious unexpected effects of perspective from this point of view. A balloon trip is free from all sense of hurry.

"An aeroplane, on the other hand, carries you along at an express-train speed of forty miles an hour or more. The earth is swept past you with bewildering rapidity. As a rule, an aeroplane does not rise to any great height, and you rush along comparatively close to the ground. There is little chance to look about. You have none of the extended views possible from the higher altitudes traveled by balloons. A ride by dirigible may be compared to an old-fashioned coaching trip,—when you roll smoothly along and, from your elevated seat, command a view of the surrounding country. An aeroplane flight is more like the dash of a limited express train, with fleeting glimpses of the scenery.

"An aeroplane seat is cramped, and you

hold on for dear life. The basket of a balloon or the staging of a dirigible gives you room to move about. You can keep a log of your progress trip and eat your dinner; even sleep with perfect comfort. There is, besides, a far greater sense of safety in a balloon, contrary to a very general impression. Personally I am greatly distressed by height. I cannot stand on the edge of a high building for fear of falling, but I feel perfectly comfortable at any altitude in a balloon. The wind eddies about a high building and, as you imagine, threatens to pull you over. It is much the same with an aeroplane. A balloon, traveling with the wind, is absolutely free from this sensation.

"It is a common impression that, viewed from a balloon, the earth seems to be standing still. This is, however, only a first impression. I have had many passengers remark this effect, while as a matter of fact we were traveling a mile a minute. The altitude is deceptive. But if you look directly downward from a balloon the effect is magical. The farms, towns, and cities glide past quickly, silently. From an altitude of 1000 feet or more all the scars on the landscape are invisible. The marshes or barren tracts are all blended in beautiful color-schemes. Such a flight is beyond any question the most delightful experience in the world."

The extended flights made by Count Zeppelin in his great dirigible balloon have proved that such travel is by no means exhausting, and certainly not monotonous. It will be recalled that one of these flights was more than thirty-six hours in length. Such a journey by rail or by boat would be tiresome, to say the least. Count Zeppelin described the trip as restful throughout and entirely free from the strain of ordinary travel. His enthusiasm for the new sensation has led him to organize a line of airships for passenger traffic. He believes that, once experienced, there will be plenty of patronage even at a very high rate for transportation, and that any one who has experienced the delights of an air flight will never again be content with the more commonplace means of transportation.

Not the least pleasure of flying, common both to the dirigible and aeroplane journeys, is the cordial relation which the airship seems to establish between its passengers and the entire countryside. The traveler in the sky is everywhere an object of sympathetic attention. He may enjoy, if he choose, the hospitality of every house in the vast panorama beneath him. Invitations to descend for a meal or a lodging, the use of the horses, automobiles, anything he may desire, are shouted to him continuously mile after mile. But let the traveler descend and attempt to retrace his journey by automobile and the same people will treat him with indifference or distrust.

HEALTHFULNESS OF AIR VOYAGING.

The healthfulness of the upper regions of the air, whether visited by aeroplane or balloon, must be included in any description of this new experience. We readily undertake a journey of hundreds of miles by train, boat, or automobile to reach a higher altitude where we may breathe cooler and purer air. The airship rises to the altitude of the mountain top in a few minutes. Looking well into the future, Rudyard Kipling has described the hospital airships with their decks crowded with tuberculosis patients gaining new life from the upper air lanes.

The experience of Mr. A. Leo Stevens during many flights is a case in point. "As one ascends rapidly, especially on a damp, depressing day," said Mr. Stevens, "the relief to one's lungs is soon noticeable. The air becomes more rarified with every breath. I have felt something of the same sensation in ascending a high mountain. I have started several times on flights suffering from a severe cold when I have noticed that my head has cleared after a few hours spent in the high altitudes. Incidentally one never takes cold on a balloon trip. I have been wet through by passing storms and almost frozen, but I never return to earth with a cold. There are no microbes in the upper air lanes."

THE HUDSON-FULTON ART EXHIBITION.

BY ERNEST KNAUFFT.

THE most important art exhibition New York has ever seen is the one now being held at the Metropolitan Museum of Art in connection with the Hudson-Fulton anniversary. Some thirty-seven Rembrandts are shown, together with twenty canvases by Hals, and over a hundred other examples of Dutch painters of Hudson's time; as well as with a collection of Colonial furniture and examples of the industrial arts made prior to Fulton's death, 1815, and a number of paintings by American artists born before 1800.

It is a revelation to learn that so many masterpieces of Dutch art are owned in this country. The Rembrandt portraits, rich in the Dutch master's marvelous chiaroscuro, dominate the exhibition, proclaiming the artist's stupendous understanding of form.

The silver made by Paul Revere (and by his father, a Frenchman, Appollos Rivoire, who was taken to Boston when a child, and there set up as a goldsmith and silversmith, in 1723, anglicizing his name to Paul Revere) proves that the celebrated hero of the "midnight ride" was as adept a craftsman as he was a horseman.

The beautiful flowing lines of the Colonial furniture, especially of the complete set by the New York cabinet-maker Duncan Phyfe, convince one that our Knickerbocker forefathers did not live amid the rough-hewn surroundings of the pioneer.

"PORTRAIT OF A MAN" (1665).

(A superb Rembrandt owned by Mr. James Ross. A magnificent piece of coloring, rich in walnut browns and mahogany reds; the eyes are painted as only Rembrandt could paint eyes.)

A WONDERFUL REMBRANDT COLLECTION.

While the majority of paintings in the exhibition are masterpieces there are a few special ones that stand out above their fellows as complete and finished pictures, perfect in drawing, color, and in light and shade. Let us select a few of these for consideration. First there is a "Portrait of a Man" by Rembrandt, owned by Mr. James Ross, of Montreal. We give an illustration of this canvas, but of course our tiny print does not show the beautiful dull red coloring of the costume, nor the fine passages of modeling about the mouth, nor the liquid quality of the eyes. Rembrandt is celebrated for the way he painted eyes, but he seems to have outdone himself in this portrait. In it there are almost all the qualities that go to make a great picture; that is to say, the figure is lifelike and full of character; it seems to be standing within space, surrounded by light and air and not flat against a wall, while the whole canvas makes a decorative color unit that charms us, aside from its qualities as a graphic and vivid portrait.

Another picture that has exactly the same qualities is Rembrandt's portrait of his son "Titus" (from the Kann collection recently purchased by Mr. Altman and added to the collection after the exhibition was opened). The Ross "Portrait of a Man" was painted by Rembrandt when he was about forty-nine years of age. Compare it with earlier canvases shown, like the "Nicholaes Ruts," and the portraits of Rem-

"A YOUNG PAINTER" (JAN VAN DE CAPELLE?), BY REMBRANDT.

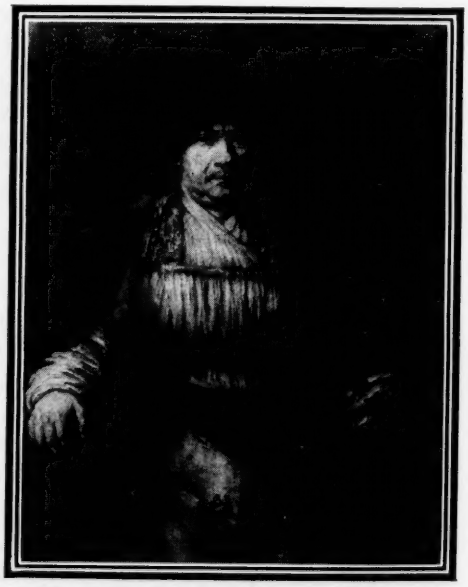
(Owned by Mr. J. P. Morgan. An example of the artist, typical in chiaroscuro and sentiment.)

brandt owned by Mr. E. D. Libbey, Toledo, and Mr. F. G. Logan, Chicago, all painted when the artist was twenty-five, and the "Noble Slav," painted when he was twenty-six, and we see a decided difference. True, the earlier works are decidedly Rembrandtish; the "Noble Slav" especially has that well-known superabundance of volume, that effect of air surrounding the figure that we associate with Rembrandt; and the eye follows its surfaces plainly as though it were some heroic-sized statue. But with all these qualities there is not that looseness of touch, that evasive suggestiveness, that freedom that allows the accentuating of some portion of the form here, the obliterating or putting down of some detail there, simply because the artist felt that such accentuating or repression would enhance the general effect of the canvas. These touches come only when the artist matures, and they defy analysis because they are done without rule or law, the artist impelled by feeling only.

These qualities are found in other late canvases and such as "A Young Painter" (Jan Van De Capelle?), painted when Rembrandt was forty-two, and the large "Portrait of Himself," owned by Henry C. Frick, painted when the artist was fifty-two. This great canvas is a rather brutal presentation, perhaps, but a vigorous realization of personality; it shows the painter decked out in some fancy costume from his studio, ready to defy the world that had begun to ignore him and his art. Again we find these qualities in the "Portrait of a Man," owned by the Metropolitan Museum of Art, referred by the catalogue to 1665, when Rembrandt was fifty-nine. This, and the smaller Metropolitan Museum portrait No. 106, also painted at fifty-nine, hold remarkably well in this exhibition, as does the "Portrait of a Girl (Hendrickje Stoffels?)," owned by the Art Institute, Chicago. This canvas is exceedingly low in tone, more tender than the average Rembrandt. There is a beautiful play of light and shade about the subject's head which melts into the background in the most delightful manner. In this painting there are no rude passages.

A SCORE OF HALS CANVASES.

In the portraits by Hals we are first struck with the display of technical mastery. Hals is an out-and-out virtuoso. There are several canvases that show this virtuosity, especially "A Boy Playing a Flute" and "Singing Boy." These represent Hals' magnificent



"PORTRAIT OF HIMSELF," BY REMBRANDT.

(Owned by Mr. Henry C. Frick. A portrait much admired by artists because every brush stroke shows Rembrandt's understanding of form.)

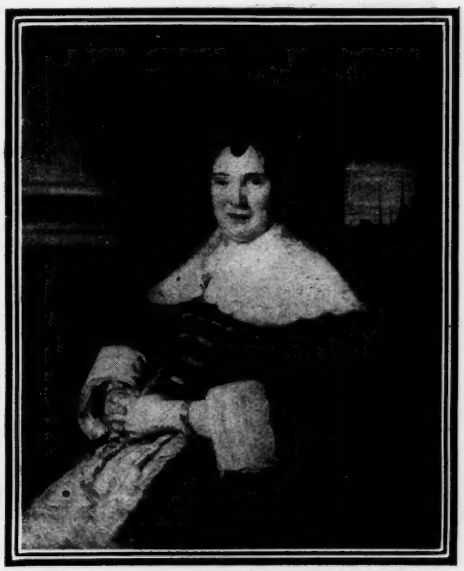
power as a sketcher. "The Boy with the Flute" is a small canvas showing but the head and hands of an animated musician, and is almost without blemish. It seems as though pigment and brush could hardly produce more vividly the counterfeit of life. One feels that the artist's eye had perfect vision, and that his hand had responded in perfect harmony with that vision. Rembrandt is rarely a facile workman; in his work we see brownish shadows that are not fully defined, tones that have been worked over as though he was never quite sure of their correctness; but in this Hals "Boy Playing a Flute" it seems as though the painter from beginning to end obtained his

"BOY PLAYING A FLUTE," BY FRANS HALS.

(Owned by Mr. E. D. Libbey; a mere sketch but a marvelous example of brush work and warm coloring. A veritable lesson in painting.)

effect *a prima;* as though he never for a moment was uncertain of the exact shape, the exact color, the exact value, that a shadow should be; as though he had no trouble in mixing upon his palette the tints to correspond to those colors and those values, and that having mixed the pigment he put it on to stay. Hals, Rubens, Valasquez, and our own John Sargent have shown the world the right method of painting in oil.

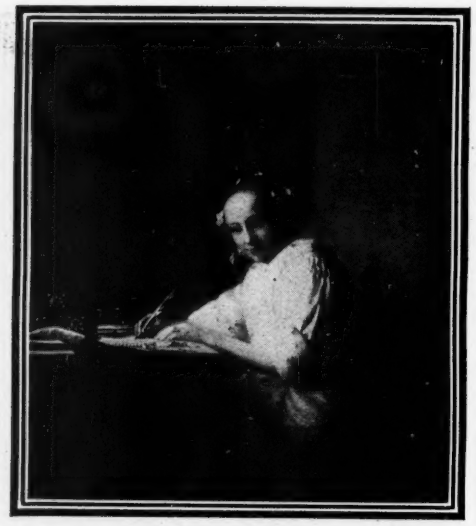
There is another Hals, the portrait of "Dorothea Breck," wherein we find the easy painting of a gloved hand, that also reaches the high-water mark of technical dexterity. It seems as though brush-work could go no further. But in this portrait the face, while a fine piece of characterization, is not painted with the same looseness of touch, nor the lusciousness of color, as is that of "The Boy with the Flute," and the hair is particularly unattractive, being flat and wiry in treatment.



"PORTRAIT OF A LADY," BY FRANS HALS.

(Owned by the Metropolitan Museum of Art. A superb example of Dutch portrait painting, the brush work perfectly free, yet the modeling of all the details of the drapery is careful and realistic.)

So we turn with greater satisfaction to two "official" portraits by Hals, the one of "Isabella Coymans" and the "Portrait of a Lady,"—erroneously called the wife of the artist, owned by the Metropolitan Museum of Art. In these two portraits we must remember that the artist did not have the freedom that he had in the "Flute Player." The latter he probably made for his own amusement and thus could paint it in any way he chose, but these two portraits were doubtless painted to order, and he was constrained to paint a portrait that would be pleasing to the sitter and to her family. He is evidently willing to give his sitters just what they want. Every bit of costume has interested him and he has painted it with an understanding of form that is as scientific as it is artistic, but at the same time the picture is fundamentally a portrait and not a still-life study. The lace collar covers a human shoulder and the cuff a human arm. The characteristics of the subject's figure ("Isabella Coymans" is



"LADY WRITING," BY J. VERMEER VAN DELFT.

(Owned by Mr. J. P. Morgan. A perfect example of genre painting; though a trifle faded, it is still a canvas full of beautiful color—tender blue and yellow.)

a young girl of about twenty-five, whereas the Metropolitan Museum's canvas is of a woman of fifty) are given with as much anatomical correctness as an art school prize-winner obtains in his "Academy" studies.

It is not many years ago that the custom prevailed in America of a portrait painter finishing the head entirely from his subject, but only sketching in the hands, and employing a model to pose for the hands while he finished them. The result was that the hands lacked the character that matched the face. It was also the custom to have a sitter send her gown, or a man to send his frock-coat, to the artist, which the artist would put upon a lay figure and then finish the portrait. The result in this case was that the figure of the portrait was not in harmony with the head. One cannot conceive of Hals following this procedure. He never slurred over the detail of the costume, but the costume always covered the figure that "went with" the head and hands of the sitter. Both "Isabella Coymans" and the Metropolitan Museum portrait (No. 40) are perfect examples of this unity of costume and figure. There is not, however, as successful painting in the head and hair of the "Isabella Coymans" as there is in the old lady. The head is somewhat flat and the hair stiff and they do not melt into the background as they should. This flatness is observed in the "Portrait of a Man," No. 35, which, while a perfect piece of characterization, so far as the drawing is concerned, is cold in color; hanging as it does near the Ross Rembrandt we feel its flatness and coldness by contrast with the mellower Rembrandt.

WORKS BY VERMEER AND TERBORCH.

A third name in Dutch art is that of Vermeer Van Delft. He was not a great genius like Rembrandt, not a seer who was contemplating broadly the whole of humanity, but he was an observer of form, light, shade, and color, and a composer of pictures that rank high in the world's art. The art of Vermeer, like that of Hals, is strikingly modern in treatment. There are said to be but thirty-six authenticated paintings by him, of which seven are in America, and six of these are in this exhibition! Three of these have particular charm. "The Lady with Lute," the "Lady Writing," and "Girl with Water-Jug," owned by the Metropolitan Museum, are all pictures with the single figure of a woman surrounded by carefully painted still-life. They introduce us to a glimpse of Dutch life that is calm, contented, comfortable. The painting is exactly what genre painting should be; that is to say, the trivial occupation of the subject and the commonplace objects that surround her are made beautiful by the painter's interpretation of form and color. They are not too large, never over twenty by twenty inches, and the figures and still-life are beautifully placed, so that the composition has a decorative balance of mass and color.

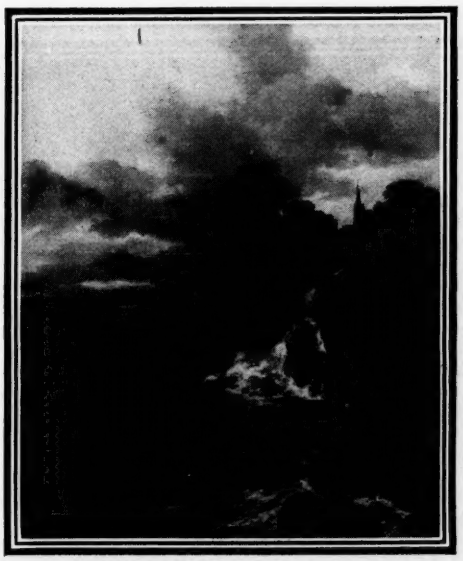
We may best appreciate the perfect composition of the Vermeers by comparing them with some other genre pictures. For example, there is a picture by Terborch, "The Guard-Room," in which the coloring, especially that of the trumpeter's blue silver embroidered coat, is quite equal to Vermeer's, indeed as regards color this is perhaps one of the most distinguished canvases in the exhibition. But Terborch's composition is far from pleasing; the interest is almost entirely on the left, while in Vermeer the interest is equally distributed throughout the picture. Again, while another Terborch, "Portrait of Young Man," contains a background and some still-life that is fine in local color, yet in it every object is provokingly separated from its fellow. There is no light and shade playing through the picture to destroy its flatness and to take

away from the monotony of the painting. Each object looks "cut out."

A GROUP OF LANDSCAPES.

The landscapes and marines are for the most part of an art less highly developed than are the figure subjects. There are no surfaces on which light falls and air surrounds with as much truth as in the Vermeer still-life objects. The landscapes are fundamentally monotones. Almost every one would be as satisfactory in a good photographic reproduction as it is in the original painting. With the memory of American landscape in mind the Dutch landscapes seem heavy and "impossible" in color. Forgetting for a moment, however, their lack of color, we may find in them evidences of the close observation of nature that reminds us that in Dutch art was the beginning of modern landscape painting.

The large Hobbema, "Cottage Among the Trees," is a noble presentation of Nature. The trees are effectively massed and the cottage showing through them is painted with more color perception than is usual in the Dutch landscape. Jacob Van Ruisdael's "Gnarled Oak," while so dark that it is difficult to distinguish all its subject-matter, seems to rise above mere observation of superficial forms and to interpret rather a poetical mood of the painter.



"A WATERFALL," BY JACOB VAN RUISDAEL.

(Owned by Mr. Henry C. Frick. The Dutch landscapes are not such perfect art as are the figure subjects. In comparison with modern paintings they are heavy and black and dark, but they are frequently poetical and picturesque in subject, as we may see by this Ruisdael.)

ROBERT FULTON, FROM A BUST, BY JEAN ANTOINE HOUDON.

(The original marble is owned by the National Academy of Design; a bronze duplicate is shown at the Hudson-Fulton Art Exhibition.)

AMERICAN PAINTINGS AND FURNITURE.

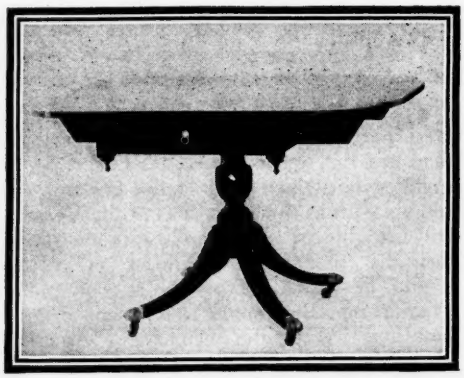
The American Section, consisting of over six hundred exhibits, contains paintings by artists born before 1800 and examples of the industrial arts dating from the earliest Colonial times to about the period of Fulton's death, 1815.

The early American artists were uneven workers, sometimes painting figures as stiff as wooden Indians, incased in tin drapery, again painting with a directness and an understanding of construction almost equal to Hals. And at times they show a rare sense of subdued color. The little miniature, "Portrait of Mrs. Huyer," by Washington Allston.

almost a monochrome, is exquisite in its low-toned color. The "Portrait of Mrs. Samuel Osgood," by John Trumbull, is also low in tone, a beautiful harmony of yellows and browns. A robust and well-brushed-in painting is Copley's animated "Portrait of Mrs. Fort"; his "Portrait of John Erving" shows a face splendidly modeled, though the figure is stiff and unyielding. Thomas Sully had more "style" than any other American painter, and his two portraits of "Mrs. Middleton Smith" and "Mrs. James Failie (Maria Yates)" show that he could paint in a "large" manner, Benjamin West's "Portrait of Robert Fulton" is somewhat "hard," but remarkably firm in drawing, especially in the hands. The Malbone miniatures show pure and fresh color.

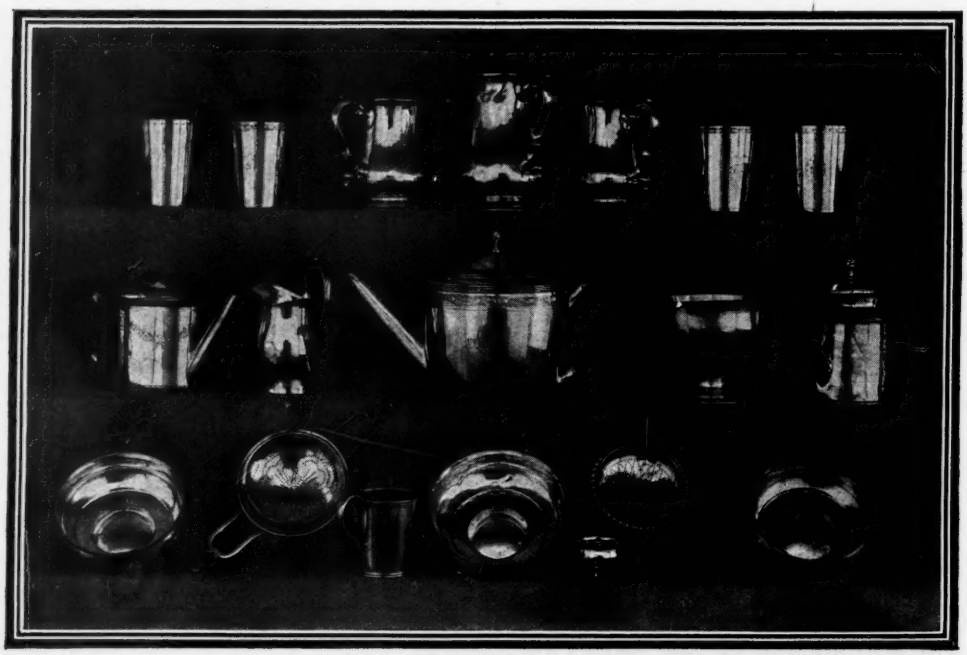
The furniture is highly interesting, especially if viewed with the help of the catalogue, with its valuable introduction and descriptions. Mr. Kent, writing in the catalogue, is not extravagant when he says: "Perfect in workmanship, proportion and feeling for line, Phyfe's best furniture, like that here shown, is worthy of a place with furniture of its class made in England."

The whole exhibition opened one's eyes to some significant facts,—namely, that when the Dutch were settling Manhattan, Rembrandt and his contemporaries were painting some of the world's masterpieces,—and that later the Colonists were brought under European art influence when such men as Houdon visited this country; and, lastly, that our early native painters and artisans were men of no mean talent.



MAHOGANY TABLE, MADE BY DUNCAN PHYFE.

(The simple curves of the top of the table, which might be cut by any country carpenter in half an hour, emphasize the fact that beautiful furniture need not be elaborate in its construction.)



SILVER MADE IN BOSTON BY PAUL REVERE.

(The Revere silver, like the Duncan Phyfe furniture, teaches the lesson of the charm of simplicity.)

THE COMING MUSICAL SEASON.

BY LAWRENCE GILMAN.

NEW YORK is becoming musical. The assertion is made advisedly. If one had examined in an analytical spirit the prospectuses put forth a decade ago by the management of the Metropolitan Opera House and the various concert organizations it would have been observed that, in the order in which the delights of the coming season were heralded, the music to be performed was invariably announced last and the persons who were to perform it were as invariably announced first. In the opera prospectus the names of the singers headed the list of activities; the titles of the works in which they were to appear emerged only as one scanned the more inconspicuous parts of the circular. So also in the case of the great orchestral organizations: first the formidable array of distinguished soloists,—singers, pianists, violinists,—whom the Philharmonic, or the New York Symphony, had been fortunate enough to secure, then the music which was to be played.

In following this procedure the managers and impresarios were shrewdly responding to the preferences and demands of their various publics. A decade ago,—even five years ago,—the average citizen preparing to purchase tickets for an opera or concert performance was chiefly interested to learn what singers were to be in the cast (if the performance were operatic) or what soloists were to enliven the concert program. Whether "Faust" or "Rigoletto" was the bill, or whether he was to hear the Eroica Symphony of Beethoven or the C-Major Symphony of Schubert, was to him a matter of secondary consequence. Those were the golden days of the soloist and the "star,"—the musical Era of Personality.

In those unregenerate times a manager would scarcely have dared to advertise a purely orchestral concert, with no pianist or fiddler to beguile and hold his audience; and as for the opera, it is well remembered that Mr. Maurice Grau used to affirm that if he wanted an empty auditorium at the Metropolitan all he needed to do was to announce a new music-drama for performance.

Things are different to-day. Take up the announcements sent out by the great orchestras. The works advertised for performance are not, to be sure, named on the front covers; but they are not, as in former days, listed casually at the end, or not listed at all. As for the soloists, they have not quite been banished, but they have ceased to dominate the prospect in the imperious and contemptuous manner of old. Indeed, the Boston Symphony Orchestra has within recent years dared to give several concerts in a season without the aid of a soloist, and the audiences have not rebelled, nor have they protested by leaving the hall; and this year the Philharmonic Society will dispense with soloists at a number of its concerts. But it is in the case of opera that the change has been most signal and astonishing. In the season of 1899-1900 at the Metropolitan no new work was given. For the season about to begin,

MARIE DELNA.
(The famous French contralto, who will sing at the Metropolitan.)

twelve works hitherto unheard in New York are announced by the Metropolitan management and nine by Mr. Hammerstein; and of these twenty-one novelties one-half are virtually certain to be produced.

Doubtless it would be going too far to say that this welcome state of affairs indicates a fundamental and permanent improvement in the taste of the musical public. That New Yorkers have really learned to prefer music to musicians,—to rank the work above the performer,—would be a cheering hypothesis to advance, but it would be an excessively optimistic one. It is still true that to the majority of opera-goers the element of paramount interest in a performance is that Mr. Caruso or Miss Farrar is to sing, while it is a matter of comparative indifference whether the opera is to be "Pagliacci" or "Bohème" or "Rigoletto"; it is still true that most concert-goers are attracted to a particular concert because Mr. Kreisler or Mme. Nordica is to "assist" as soloist, and not because a symphony by Brahms or a tone-poem by Richard Strauss is to be played. Yet it is not extravagant to say that there is to-day, among the large and heterogeneous musical public of the metropolis, a more widely diffused interest in music *per se*,—in the work to be performed rather than in the art and personality of the performer,—than there has ever been before. We still sit adoringly at the feet of the interpreter; but we are increasingly apt to look beyond and behind him at the creator whose instrument he is.

LEO SLEZAK.

(Czech tenor, to sing at the Metropolitan.)

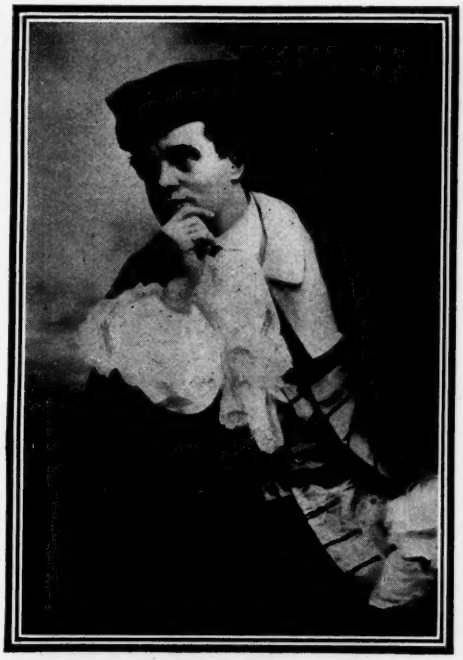
Whether in this matter the public has led the impresarios, managers, and conductors, or whether the latter have pointed the way, is a question which need not here be discussed. It is at least clear that, so far as opera is concerned, if there is not an actual and persistent interest in new works, the managers of the two rival houses are riding for a fall. By the elder house no less than a dozen works new to New York are announced for production, either at the Metropolitan itself or at its adjunct, the New Theatre, where a series of forty subscription performances of "lyric opera and opéra comique" (as the projectors classify them) are to be given during the season. Five of the operas announced for production last season, but not given, are promised again. These are Laparra's "La Habanera," Converse's "The Pipe of Desire," Tschaikowsky's "Pique Dame," Goldmark's "Cricket on the Hearth," and Humperdinck's "Königskinder." New to the list are Alfred Bruneau's "L'Attaque du Moulin," Xavier Leroux's "Le Chemineau," Alberto Franchetti's "Germania," Ermanno Wolf-Ferrari's "Le Donne Curiose," Leo Blech's "Versiegelt," Ferdinando Paër's "Le Maître de Chapelle," and "Amour des Tziganes," by Franz Lehar, he of the immortal "Merry Widow" waltz.

The nature of the first five works on this list was indicated in these pages a year ago. Concerning the remaining seven it cannot be said that they promise any very notable artistic revelations. "L'Attaque du Moulin," by the Frenchman Bruneau, based upon a story by Zola, has not, during the sixteen years since it was first produced, impressed itself upon discriminating minds as a work of especial importance. Nor has Leroux's "Le Chemineau," which is derived from Jean Richepin's like-named play, made known to New Yorkers several years ago as "The Harvester." "Germania," produced at Milan in 1902, is the work of a wealthy Italian, whose earlier opera, "Asrael," scored a memorable failure at the Metropolitan in the season of 1890-91. "Le Donne Curiose," first given at Munich half a dozen years ago, is a work of slight texture by the German-Italian composer whose cantata, "La Vita Nuova," attracted favorable attention when it was recently performed in New York by the Oratorio Society. Blech's "Versiegelt" is a one-act comic opera; Lehar's "Amour des Tziganes" is said to be worthy of the composer of "The Merry Widow"; Paër's "Le Maître de Chapelle" ("Il Maestro di Cappela") can only be called a novelty by courtesy, since it is almost ninety years old.

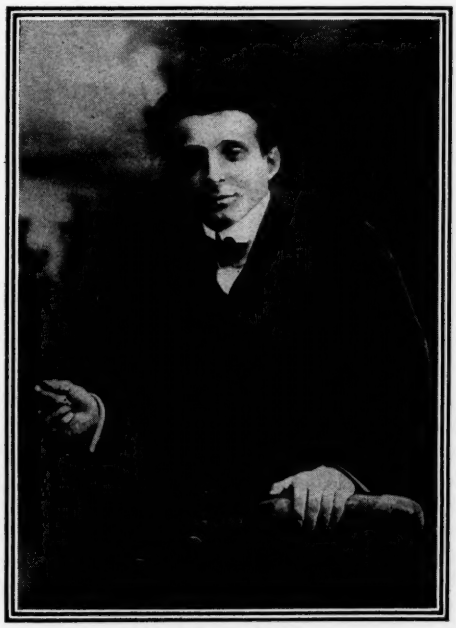
In addition to these works the Metropolitan authorities make known that they have secured the rights to a considerably more promising group of novelties, the chief of which are Claude Debussy's "La Chûte de la Maison Usher" and "Le Diable dans le Beffroi" (founded, respectively, on Poe's "The Fall of the House of Usher" and "The Devil in the Belfry"), and a musico-

dramatic version of a famous and not-unexploited story which he calls "La Légende de Tristan," Gustave Charpentier's "La Vie du Poète," Paul Dukas' "Ariane et Barbe-Bleu," and Maurice Ravel's "L'Heure Espagnole." But unfortunately several of these works are as yet uncompleted, and none is scheduled for immediate production. So we shall have to content ourselves, so far as the Metropolitan is concerned, with the best that Laparra, Converse, Goldmark, Humperdinck, Tschaikowsky,—the inferior Tschaikowsky of the operas,—Bruneau, Leroux, Franchetti, Wolf-Ferrari, Blech, Paër, and Lehar can give us.

Mr. Hammerstein's promises contain more stimulating matter. He has, to begin with, captured the operatic sensation of the year, Strauss' portentous "Elektra," which is fairly certain to provoke a wider and keener interest than any other new work on the local operatic horizon. He has secured also Strauss' earlier and delightful "Feuersnot." Massenet, who appears to be the patron saint and tutelary angel of Mr. Hammerstein's establishment, is represented by four works unfamiliar to New York: "Hérodiade" (in which Massenet anticipated Strauss as a delver in Salome-lore), "Sapho," "Cendrillon," and "Grisélidis." Mr. Hammerstein announces also an opera by the eminent Hungarian violinist Jeno Hubay, "The Violin Maker of Cremona"; Leoncavallo's "Zaza," and an authentic "American" opera, "Natoma," the libretto of which, on an Indian subject, is by Mr. Joseph D. Redding, with music by Victor Herbert. Of this group of offerings the two operas by Strauss are the only ones which are likely to yield artistic satisfaction of the keener sort. Mr. Hammerstein, as has been indicated, sets much store by Massenet; but for most of us the conviction grows, upon an increasing acquaintance with the works of this incredibly industrious music-maker, that "the more they differ, the more they are the same,"—alike in emptiness and aridity. Of the opera by Leoncavallo not much, one fears, is to be expected; nor is there any impressive testimony to the effect that Hubay's opera is of exceptional significance. As for the opera by Messrs. Redding and Herbert, it would be manifestly unjust to criticise it in advance; but it must be said that the memory of Mr. Herbert's previous exercises as a composer of serious music does not give rise to the most sanguine expectations concerning the score of "Natoma." Mr. Herbert is in-



EDMOND CLÉMENT.
(French tenor, engaged by the Metropolitan.)



EGISTO TANGO.
(New Italian conductor, engaged for the Metropolitan.)

genious and charming as a composer of operetta and salon music; he has not yet made it clear that he can be equally happy in a more exacting *métier*.

In addition to their several novelties, both opera houses promise their established répertoires. The Metropolitan, in addition, will revive (among less important works) Gluck's "Orfeo," Weber's "Der Freischütz," and Verdi's "Otello." The Manhattan will again present Debussy's incomparable "Pelléas et Mélisande," Charpentier's entertaining "Louise," Strauss' "Salome," and Massenet's "Thaïs" and "Le Jongleur de Nôtre Dame," in addition to the perennial Mascagni-Leoncavallo-Puccini répertoire and the older French and Italian operas. Mr. Hammerstein also holds out a prospect of performances in a French version of Wagner's "Lohengrin," "Tannhäuser," and "Die Meistersinger."

MARGUERITE SYLVA.

(The American soprano, who will be a member of the regular Manhattan company this winter.)

Of new singers the Metropolitan announces the larger number. Out of a total of eighty-two (involving, as the management has touchingly confided, a salary list of $2,000,000), thirty-three are newcomers. Chief among these are Marie Delna, Leo Slezak, Edmond Clément, John Forsell, Lydia Lipkowska, Hermann Jadklower, and Anna Mettschik. Marie Delna is a French contralto of large reputation in Europe. She has sung both at the Opéra and the Opéra Comique in Paris. Leo Slezak, the Czech tenor, was "discovered" by Gustav Mahler and was for nearly a decade thereafter a conspicuous member of the Opera at Vienna. Edmond Clément, a French lyric tenor, comes from the Opéra Comique in Paris; John Forsell, baritone, comes from the Stockholm Royal Opera; Lydia Lipkowska, soprano, Anna Mettschik, contralto, and Hermann Jadklower, tenor, are Russians. Lipkowska has sung in St. Petersburg, Moscow, and at the Chatelet Théâter in Paris; Mettschik comes from the Imperial Opera in Moscow; while Jadklower, though a native of Riga, has sung for the most part in German

FREDERICO CARASA.

(The much-discussed Spanish tenor at the Manhattan.)

MME. CARMEN-MELIS.
(Another singer who will appear as "Elektra" at the Manhattan Opera House.)

opera houses. Others of the company who are new to the Metropolitan are Jane Osborn-Hannah, Jane Noria, and Vera Courtenay, all Americans, and sopranos; Jeanne Maubourg, a mezzo-soprano from the Théâtre de la Monnaie et Brussels, and Dinh Gilly, an Algerian baritone from the Paris

FERRUCCIO BUSONI.
(The eminent Italian pianist, who will be heard in America after several years' absence.)

Opéra. Those who are sometimes affectionately referred to as "old favorites" will return in considerable numbers. We shall attend again upon the activities of Miss Farrar, Mme. Fremstad, Mme. Nordica, Mme. Gadski, Mme. Homer, Miss Destinn; Messrs. Caruso and Scotti, Anthes and Burrian, Jörn, Soomer, Amato, Goritz, Witherspoon, and the rest; and it is said that the great Victor Maurel, once one of the chief glories of the Metropolitan, will return to its boards for the sake of appearing in Laparra's "Habanera."

There are two new conductors,—Vittorio Podesti, from the St. Petersburg Imperial

MME. MAZZARIN.
(One of the singers who will be heard as "Elektra" in Strauss' opera at the Manhattan.)

Opera, and Egisto Tango, from the Komische Oper in Berlin, who once paid a visit to this country and was heard at the Academy of Music under the ægis of the lamented Colonel Mapleson. Arturo Toscanini, the masterful Italian, will again be here as the right arm of Mr. Gatti-Casazza, and Alfred Hertz, the able and warm-blooded Wagnerian, will return. The orchestra has been increased, and will number 153 players.

The season is to endure for twenty weeks, and performances are to be given outside of

New York,—in Philadelphia, Brooklyn, Baltimore, Boston.

Mr. Hammerstein, with charmingly characteristic waywardness, has foregone the customary detailed announcement of the make-up of his company. At the moment of writing, all that he has chosen to divulge to the public under this head is contained in these words: "Subscribers doubtless will be glad to hear of the renewals of contracts with Mary Garden, Luisa Tetrazzini, Gerville-Réache, Augusta Doria, Emma Trentini, Lina Cavalieri, Charles Dalmores, Maurice Renaud, Hector Dufranne, Charles Gilibert, Giovanni Zenatello, Mario Sammarco, Florencio Constantino, Armand Crabbe, Giovanni Polese." Certainly the subscribers should be glad, and doubtless they will be; for six of the singers named in Mr. Hammerstein's tentative list are artists of the highest rank, four are admirable by reason of various traits, and the remaining five are serviceable. The director announces further that he has engaged for the name-part in Strauss' "Elektra" the creator of the rôle at the Monnaie, Brussels, Mme. Mazarin, and, as an alternate, an Italian singer, Mme. Carmen-Melis. It is also understood that Mr. Hammerstein will take over from his "popular-price" opera company, which has been occupying the Manhattan since August 30, the tenors, Frederico Carasa and Nicola Zerola; the sopranos, Marguerite Sylva and Alice Baron; the contralto, Margarita d'Alvarez, and the baritone, William Beck.

TILLY KOENEN.

(Dutch contralto, who is making an American concert tour.)

SERGEI RACHMANINOFF.

(The distinguished Russian composer-pianist, who will be heard here in concert this season.)

As a season within a season Mr. Hammerstein will give, in addition to the subscription series and at prices ranging from $1.50 to $3.00, performances of opéra comique, to be sung by a company headed by the French soprano Henriette de Lorme and the tenor Henri de Vries.

In place of Cleofonte Campanini, retired, six conductors have been engaged, the chief of whom is Henriques de la Fuente, from the Antwerp Opera.

Admittedly the orchestral organizations will not find it an altogether easy matter to meet the powerful opposition of the opera houses; yet despite this fact the Philharmonic Society, which this season takes a new lease of life after a thoroughgoing reorganization, is planning to make a larger demand upon the sympathy and the pursestrings of the

New York public than it has ever made before. Within recent years content with sixteen concerts a season, this venerable body will give during the coming winter thirty-four concerts in Manhattan and five in Brooklyn. Gustav Mahler, who abandoned his post at the Metropolitan in order to accept the conductorship of the Philharmonic, has made radical changes in the constitution of the band, among the most vital of which are the engagement of a new concert-master, Mr. Theodore Spiering, and new players for the hitherto defective woodwind and brass departments of the orchestra. Six of the thirty-four New York concerts will be given as a "historical cycle" and five as a "Beethoven cycle."

The New York Symphony Orchestra, which continues under the leadership of Mr. Walter Damrosch, will this season take advantage of the facilities afforded by the New Theater, and will give there sixteen Sunday afternoon concerts, in addition to eight evening concerts in Carnegie Hall. A "Berlioz cycle" is announced for the last five of the concerts at the New Theater. Mr. Damrosch makes the singular announcement that as "no new symphonies of importance have been published recently," he must perforce fall back upon the symphony of Elgar which he performed here last winter,—a tiresome and, for the most part, inconsequential work which scarcely clamors for repetition. Mr. Damrosch's remark, by the way, is a misleading one. He knows as well as any one that contemporary composers are not nearly so apt to cast their ideas in the old symphonic mold as in those freer and more elastic forms that are the chief vehicle of modern instrumental thought. If he lacks sufficient novelties, why does he not produce some of the works of the younger English school of music-makers, as yet totally unknown here,—for example, those of Granville Bantock, Joseph Holbrooke, Ernest Bryson, Frederick Delius? And there are new scores by Vincent d'Indy, Maurice Ravel, Max Reger, Jan Sibelius, not yet heard in New York, which Mr. Damrosch might have considered to advantage.

Boston, as always, is far more progressive and adventurous than New York in this matter of searching out and presenting interesting new works, and when her superb orchestra visits us again this season under the stimulating directorship of Mr. Max Fiedler,—its conductor of last year,—we shall hear some portion of the long list of novelties which the New England capital is to have the satisfaction of hearing first. Among these are scores by the Englishmen who have been named above,—Bantock and Delius,—and by Boehe, Debussy, Glazounoff, Rachmaninoff, Reger, Sibelius, Sinding, Scriabine, and Strauss (the early "Macbeth" of the latter, unknown either here or in Boston).

The Russian Symphony Orchestra, continuing its indefatigable propaganda for the music of the Muscovite, announces new pieces by Arensky, Borodine, Balakireff, Glazounoff, Moussorgsky, and Scriabine.

As usual, we shall witness, in addition to the proceedings of the orchestras, the amiable activities of the Oratorio and Musical Art societies and the chamber-music organizations. Their announcements contain no features of exceptional moment.

The soloists, despite our (let us hope) progressive regeneration, we have always with us,—though, as regards the newcomers among them, their numbers are somewhat smaller than in other years. Those who will discover for the first time the great American public are the Russian composer-pianist Sergei Rachmaninoff, the Hungarian pianist Yolanda Mero, the twelve-year-old Spanish pianist Pepito Arriola, the fourteen-year-old Russian violinist Jascha Bron, the Dutch contralto Tilly Koenen, the Russian 'cellist Joseph Malkan, and the English composer Liza Lehmann, whose song cycle, "In a Persian Garden," made her widely known and adored some years ago. The famous Italian pianist Ferruccio Busoni will return after an absence of some years; and we shall be beguiled to listen also to (I shall name but a few) the great Venezuelan, Teresa Carreño; to Olga Samaroff, a pianist of excellent parts; to the admirable violinists Kreisler, Elman, and Maud Powell; to the well-beloved Sembrich, Farrar, Homer, Schumann-Heink, and to the remarkable Ludwig Wüllner, one of the most gifted and impressive *Lieder* interpreters who have ever been heard in this country.

So they come, year after year, trailing their well-advertised clouds of glory; for this is a land which, for the virtuoso who is fortunate enough to persuade us, is ever flowing with milk and honey.

"THE BUSINESS OF CITIZENSHIP" IN NEW YORK CITY.

BY WILLIAM H. ALLEN.

(Director of the Bureau of Municipal Research.)

NEW YORK CITY will hold, on November 2, its great quadrennial municipal election. The total registration is 644,644, or 2400 less than for the city election in 1905 and 43,000 less than for the Presidential election in 1908. All electors will vote for Mayor, Comptroller, President of the Board of Aldermen, and each of the five boroughs votes to elect its own Borough President. Manhattan and The Bronx will elect a District Attorney. (This is a county office and the counties of Kings, Queens, and Richmond do not elect this year.) On the city ticket also four Justices of the Supreme Court will be elected, and on the county tickets Sheriff, Register, County Clerk, and City Court Judge. The only member of the Board of Estimate and Apportionment who seeks re-election on the regular ticket is Borough President Cromwell, of Richmond. Borough President Haffen, of The Bronx, recently removed by Governor Hughes for waste and incompetency, and Borough President Gresser, of Queens, defeated in the Democratic primaries, are running for re-election independently. The principal members of the present administration who are candidates on regular tickets are Borough President Cromwell, of Richmond; John H. McCooey, Deputy Comptroller; Joseph Haag, now Secretary of the Board of Estimate; John Purroy Mitchel, Commissioner of Accounts, and William H. Prendergast, Register of Kings County. The candidates on whom public attention centers are as follows:

Office.	*Democratic.*	*Republican Fusion.*	*Independent Fusion.*
Mayor	William J. Gaynor.	Otto T. Bannard.	W. R. Hearst.
President Board of Aldermen	John Galvin.	John Purroy Mitchel.	John Purroy Mitchel.
Comptroller	H. H. Moore.	William H. Prendergast.	William H. Prendergast.
District Attorney (N. Y. County)	George G. Battle.	Charles S. Whitman.	Charles S. Whitman.
Borough President (Manhattan)	Joseph Haag.	George McAneny.	George McAneny.
Borough President (Brooklyn)	John H. McCooey.	Alfred E. Steers.	Alfred E. Steers.

Relatively few voters could give the names of their own preferences for Justices of the Supreme Court, Aldermen, Register, County Clerk, or City Court Judge. With the exception of their Mayoralty candidate, the Democratic tickets, practically without exception, appeal to straight organization men. The Republican tickets, inasmuch as they contain a number of Democrats, and represent numerous other compromises with fusion elements, are not throughout so appealing to organization men. The independent fusion ticket, called into existence on October 9, was heralded with no little enthusiasm by the Republican-fusion elements, which thought that Mr. Hearst's candidacy would strengthen the chances of all candidates on their ticket, except possibly its head. While many supporters of the third ticket believe that it will insure the defeat of Judge Gaynor, they differ as to whether the election of Mr. Bannard or of Mr. Hearst is more probable.

CONFLICTING FORCES AT WORK.

New York has long been recognized as America's metropolis not only in population but in superlatives and paradoxes. At no time, however, had its biggest-ness and its paradoxes been more obvious than in October, 1909, as the Hudson-Fulton festivities blended into the municipal campaign.

SOME SUPERLATIVES INVOLVED.

Here are some of the superlatives involved: A ballot of twenty-odd columns will confront 645,000 registered voters. The successful candidates will spend in four years a thousand million dollars, nearly half the yearly earnings of all the country's 230,000 miles of railroad. They will act for 4,500,000 people in full gaze of 80,000,000. Their army of over 60,000 employees is nearly twice the entire United States Navy and almost as large as the nation's standing army. Nowhere in the world are bigger promises made; nowhere have been told so many of

the vital facts of municipal administration; nowhere has waste been proved on such a colossal scale; nowhere have officials tried so hard to make the public intelligent as to causes of waste and inefficiency, their time and place. Nowhere are such huge sums spent on education and health. New York's police force of 10,000 is the biggest, the best, and the "baddest" maintained by any city in its class. It believes its fire force of 4300 is the best; it knows that force costs the most. It is employing the soundest principles ever worked out for tenement-house reform. Nowhere is the educator's hand held out so generously and effectively to foreigners and to ambitious but handicapped adults through lectures, libraries, and museums. No city is so uncertain as to its present borrowing power. None can boast such a record of election frauds, contract frauds, payroll frauds, real-estate frauds, campaign-promise frauds, or fraud-checking reforms.

SOME SUGGESTIVE PARADOXES.

Among its paradoxes the chief is its present state of mind, where with more knowledge about itself than ever before it is seemingly more dazed than ever before. With new tunnels opening into New Jersey and new bridges connecting all boroughs, with the "bridge crush" greatly reduced, or at least systematized and considerably pacified, with better express trains on elevated and steam railways, the ultraconservative elements of the community are demanding transportation relief. Men, parties, and organs that four years ago acquired a white heat in denunciation of municipal socialism are now promising municipal ownership, construction, and operation if need be; have chosen as standard-bearer the head of one great financial institution and director of numerous others; and have encouraged if not besought the whilom apostle of "anarchy and class hatred" to help them defeat the party which four years ago had their help in saving the city from his "threatened depredations."

Just after the City Superintendent of Schools announces that the Russell Sage Foundation has discovered by examining thousands of graduates that those who began years ago on part time (four-fifths now) did better than those on full time, all parties promise a full day for every child because a "half day means half scholar." Although it takes approximately two years to get a new school building, "at once" is the time asked and promised by one platform for giving a seat for every child. Although for years no children have been turned away for want of room, another platform promises to stop the scandal of turning thousands away for want of seats. More seats have been provided to date by over 150,000 than were asked by the city's educators,—yet all parties deplore the failure to provide seats.

In the same issues metropolitan papers demand primary reform, and announce a theft of party name, emblem, and machinery by methods which primary reform alone could never check.

Exponents of salvation by referendum barely mention the pending constitutional amendment which excludes subway bonds from the city's debt limit. With every party pledging an economic administration according to proper business methods, no party and no speaker have discovered in this amendment the epitome of the business issue now confronting the taxpayers. That debts for subways and docks may be incurred without limit on the assumption that they will, of course, be self-supporting means finance of either the Napoleonic or the wildcat order, according to the efficiency of the next Comptroller. Yet conservers of the city's business integrity find silence on the constitutional amendment and on what the next Comptroller should do compatible with promises of business reforms.

New York womankind is aroused as never before. They are determined to make their influence felt in this next election,—if need be by breaking up public meetings. Yet not a word of the budget for 1910, which will be voted three days before election, and which will decide what may be done for education, health, and morals throughout the twelve months of next year; not a word as to *how to get done* next year what men as well as women want; not a word of woman's obligation to use the opportunity imposed by such knowledge as budget estimates and recent investigations flaunt in her face to-day; not a caution that being wedded to the ballot entails continuing self-education and study of work done and not done, as well as honeymoons of election excitement.

Arch enemies of the tenement-house law are supporting and demanding its efficient enforcement; party leaders are charging their own party with corrupt bargains to perpetuate election frauds and pretending to be enthusiastic about candidates pledged to disregard party interests; organizations of labor and of taxpayers which threatened in June

not to vote any ticket that did not especially recognize them now applaud tickets which do not recognize them; Socialists are opposed to socializing transportation; educators anathematize politicians for locating school sites in wrong places, and at the same time permit, without public comment, a school census, which now promises not to locate thousands of children who ought to be in school; real-estate leaders when demanding a dollar's worth for every dollar of taxes openly attack accounting reforms recently made and minimize the importance of business procedure; reformers of every description are so busy pledging candidates to future reforms that they refuse to recognize reforms made by the present administration. One week "part time" threatens to be worse than ever before,—the Board of Estimate is to blame; the next week "part time" is still worse, but shifting of population is to blame; the third week it promises to fall off; the fourth week it becomes a boon and not an outrage; the sixth week it is again a scandal.

Paradoxical! Paradoxes! Who can help sympathizing with the insane patient who, after seeing an asphalt step constructed, ran to his cell for protection, tore his hair and cried: "Wheels within wheels within wheels! Mud in the morning and stone at noon! Where's this crazy world going to?" What is the explanation? Simply that we are in the midst of growing pains, and illustrating anew Professor Patten's contention that revolutions are encouraged by prosperity and not by adversity. It is because of New York's achievements that she sees her defects so clearly. We discern the promised land; but not having been there, our path ahead is not well cleared, signboards are not yet up, landmarks are missing. Leadership which was effective with an uninformed, stampedable public is itself a stranger in this new pioneer world. The "psychological moment" school of political pilots were adept in handling "now you see it, now you don't see it" issues on waves of unrest; but they have not yet gotten their land legs.

There was a time when New York did not know what it wanted. This year so many of us know not only what we want done but how we want to get it done that a new kind of leadership is required. We absolutely refuse to concentrate on the "who" until after the "what" is settled. Unconsciously but no less emphatically the public has with regard to all tickets set the probable "what's" over against the known "who's." That is the reason for the third ticket by petition so late as October 9. The Fusion and Democratic platforms promise the same things,—subways, school buildings, economy, progress. Both started the campaign with "who's" well balanced for appealing to those who ask only: "Who shall it be?" Each in its way was able to prove itself closest to the poor; each made a great point of identifying itself with the generic East Side; in the main, each drew the same picture,—one against a background of pride in New York's past, the other against a background of opportunities not realized. The paradox of tickets and parties was brought out by the insistent demand for a real fight, for speeches by opponents that would show opposition, for more talk of *how to get done* what everybody pretends to want.

October 11 comes; the campaign is alive. Everybody is talking about it. Everybody knows that something, and something different, too, is going to happen. Lethargy gives way to hard work and excitement,—and all this without any change in the citizenship of New York. Not in the public,—not in the voters,—not in the needs,—not in the opportunity, but in the leadership and in the subject of conversation is the secret of this change.

Without fully realizing it New York City has set the nation an example by waking up to the fact that what may happen from 1910 to 1914 will depend so largely upon outside contractor, outside political organization, and inside methods of serving the contractor and organization, that it has made the vital issue *what these three combined are apt to do.* Vaccinating the public by bogus ante-campaign mass meetings of protest against waste has failed to make the city immune to real smallpox-evidence in the midst of the campaign. The public has shown capacity to use information.

This new knowledge is specific as never before with regard to (1) waste, (2) inefficiency, (3) steps recently taken, and (4) steps that must yet be taken to reduce and to prevent future waste and inefficiency. While civic bodies have played an important part in bringing this situation about, the fullness of the opportunity is due to the present administration, its improvements and investigations.

ILLUSTRATIONS OF DEMONSTRATED WASTE.

Wherever investigations have been made,—and all of the more important departments

have been examined at least in part,—a high percentage of waste has been found in supplies, contracts, and salaries.

The following illustrations are taken from official records, and many of them are due to initiative on the part of the Mayor, the Comptroller, or department heads. *Corrective measures have been taken in most of the instances mentioned:*

The Park Department found no wrong in paying a salary to a woman supervisor of playgrounds who went to school instead of to playgrounds, or in leasing privileges for one-half to one-tenth their value. The Fire Department failed to test its hose for fear it would break. The Water Department had no means of preventing waste of water or undercharging. The Tenement House Commissioner admitted an enormous waste of energy because defiant law violators were not prosecuted. The Health Department had only 5 per cent. to 8 per cent. result from its school examinations. Two Borough Presidents were removed by Governor Hughes for paying from two to five times the market value for supplies and for gross incompetence; a third ran away rather than stand trial; the examination of the fourth, though not yet completed, has disclosed similar earmarks. The Comptroller has declared that from 25 per cent. to 40 per cent. of the city's clerical staff, day laborers, etc., could be dismissed and public work both increased and improved. Civil Service appointees have, after discharge, recovered their positions and thousands of dollars for back pay because the law of discharge was blunderingly violated. Bellevue Hospital bought high-priced milk for tuberculous patients and gave it to hospital employees, has paid $50 more each for ambulances than the price offered, and attempted to hold in office an employee who was a confessed violator of law, a falsifier of records, and diverter of funds from authorized purposes. The Board of Education asked for less money for fuel and supplies in 1910 than it used in 1904, yet does not claim to have applied similar efficiency tests to its repairs, janitor, and educational services. Admitted condemnation graft surpasses the "dreams of avarice."

The Police Department's business methods were found to be so lax as to warrant a statement by the Bureau of Municipal Research that such methods must injure policing efficiency. Illustrations follow of conditions found, with General Bingham's co-operation, in the business side of his own police work:

1. Typewriter erasers which could have been bought for 25 cents a dozen under the department's contract were bought in the open market for 80 cents a dozen;
2. For finger-print filing cardboards which can be bought by any citizen for 19 cents a piece the department paid $1.07;
3. Dealers' bills were destroyed and bills for increased amounts made out and passed by the department,—*e.g.*, $3.40 raised to $4.30;
4. Unauthorized purchases were made by officers connected with the department;
5. The form of contract was so indefinite and drawn with such vague phrases that gross favoritism was encouraged;
6. Specifications often contradicted provisions in the contracts themselves;
7. Dealers admitted being paid for goods not delivered,—now two thousand cards, now two lights or four lights of glass, etc.;
8. Goods were paid for twice;
9. Over one hundred unsettled bills were outstanding in October, 1908; many simply because precincts had not returned them to headquarters;
10. A bill for $116,000 covering an order issued for February 8, 1907, was still unpaid in October, 1908; the lieutenant in charge said that no one would certify for it; the contractor stated that he had never been told of the refusal of the precinct commander to certify for it;
11. Fifty per cent. more forage was ordered than was actually required;
12. Station houses of similar design and of about equal size varied in consumption of coal in 1907 from 51 tons to 110 and in 1908 from 31 tons to 102 tons;
13. Inventories known to be false were carried on the books;
14. No material was ever left over from any job, although repairs amounting to $124,000 were made in 1907;
15. On considerably more than one-half the number of wagons, repairs for one year cost from $125 to $225, and on more than one-half the number of carriages the department spent on repairs from $85 to $213. On patrol wagons, costing $400, repairs for four years ranged from $363 to $610 each.

OFFICIAL AND CITIZEN INEFFICIENCY.

Waste is as inseparable from inefficiency as is effect from cause. The fact of incompetence is sufficiently established by the foregoing facts as to waste. They convinced Comptroller Metz that "a business administration would so check waste, swell revenues, and increase efficiency that in twenty-five years income would equal cost and no taxes would be necessary." The lesson of lessons is that *a very great part of the inefficiency has been due to methods which make inefficiency both easy and certain.* Whether a man loafs or blunders depends very largely upon what is expected of him. If nobody knows whether he goes to his office or not he will frequently stay away. If no-

body knows whether and how he works when he gets there he will not do his best. To expect results without knowing what results are, never begets efficiency. In the past the most inefficient thing about New York has been its failure to find out whether individual officers and employees, offices and methods were inefficient or not. Not having tried to find out, it has not known specifically where inefficiency existed. The gap between citizen responsibility and citizen action has been quite as great as the gap between official responsibility and official action. Even the leaders among New York citizens have made as bad a mess of what F. A. Cleveland has called the "business of citizenship" as have its officials of running a great municipal corporation.

OFFICIAL CREDIT FOR RECENT GAINS.

The fact that evidence of waste and inefficiency has been presented not only by volunteer and unofficial agencies but by the Commissioners of Accounts, Charter Revision Commission, joint legislative committees on city finances and courts, the Mayor's Finance Commission, and the Comptroller is conclusive proof of New York's recent gains.

Four years ago budget-making evoked little public interest and less public intelligence. On many an October day in 1909 the newspapers have given more space to discussing the budget for 1910 than they gave throughout the month of October in Mayor McClellan's first term. The 1910 Budget Conference of four score civic and charitable agencies, a similar conference of over two hundred clergymen of all denominations, and numerous bodies of taxpayers are to-day combining with city officials in demanding the attention of the public to budget requests for next year. On two different Sundays last spring two hundred congregations had explained to them the responsibility of Christian citizenship for the use made of public funds. The Young Men's Christian Association has circulated an appeal to clergymen to refer to budget needs from the pulpit, and in addition urged 2500 voters in men's clubs to inform themselves about budget alternatives.

In Mayor McClellan's first term budget hearings were perfunctory and citizens' attendance was not encouraged. When taxpayers appeared their ignorance of budget estimates made their protest less telling than the levity it often provoked. The burden of proof was always on the taxpayers. Such a thing as a tentative budget, shifting the burden of proof to officials, was not dreamed of. At this year's taxpayers' hearings there promise to be crowds, as there were last year, representing almost every profession. To protect themselves and the public against individuals whose interest is not yet based on definite knowledge, the Board of Apportionment has won public approval by passing a resolution that citizens must discuss specific budget items and not, as the Mayor suggests, "dilate on the State of the Union." As long ago as last June taxpayers were notified that on October 14 and 18 they would have ample opportunity, "all day if necessary," to make specific protest and specific request with regard to budget estimates, plus October 27 to speak for or against the tentative budget. Similarly six different days were set apart in the first three weeks in October for department heads to make public explanations of their budget requests. Thus not only have the numbers interested in New York's budget increased but the budget season has lengthened from one or two days to six months.

NECESSARY STEPS IN BUDGET REFORM.

Briefly stated, New York City has taken twelve forward steps in budget-making, all of which tend to give the taxpayer effective control over the public pursestrings, and all of which must eventually be copied in every State and city:

1. Uniform questions are sent out to all departments.
2. Expenditures for five different six months' periods are called for, because in this way padding or increases unaccounted for are quickly detected.
3. Pay-roll costs and general maintenance costs are given for the first six months of the current year to expose attempts to overstate by the "June Hump" the needs on June 30 when estimates are made.
4. Whether pay-roll increases are requested for additional employees or to increase salaries of present employees is shown.
5. The cost of repairs and maintenance for streets is standardized before voting the budget. Similar steps are yet to be taken for pay-rolls, coal, and other important supplies.
6. Estimates of departments are printed in advance.
7. Public hearings on the estimates are given.
8. A hearing is held on the tentative budget, —what after considering all estimates the city officials propose to vote unless the taxpayers change their minds.
9. A resolution accompanies the budget to the effect that moneys therein appropriated may not be used for other purposes without authority from the appropriating body and without due notice to the public, and that

10. The monthly pay-roll shall not in any one month exceed one-twelfth of the annual appropriation. Time sheets should be required.

11. A resolution instructs the City Comptroller to look at each pay-roll to see not only that it does not exceed one-twelfth of the annual appropriations but that the amounts spent are according to the pre-budget advertised intentions. The intentions themselves are printed in the form of schedules as part of the budget.

12. A system of accounting is now in force which describes money spent when spent, work done when done, and presumes methods of inspection and audit to see that rules are complied with and the truth told.

GAINS IN KEEPING TRACK OF THE BUDGET AFTER IT IS VOTED.

Four years ago the chairman of the recent Charter Revision Commission said that "we choke questions like noxious weeds,—it is impossible to get information unless the seeker himself turns bookkeeper." The present Comptroller declared that the system of accounting which he had inherited was "obsolete" before he was born. He found himself in the same darkness as an outsider and in the leading strings of his subordinates. He grew tired of sending for a bureau clerk or office boy every time he wanted to ask a question, and demanded an accounting of the city business not too mixed up for the Comptroller himself to understand: "Because they never have done it, they tell me they cannot do it; *because they never have done it* they are going to begin to do it now. The existing system of keeping the city's accounts serves only to conceal the facts; a method will be found to present the facts so that they will be *intelligible to everybody who can read if I do not do anything else during my term of office.*"

That promise has been fulfilled. New York City has to-day installed an accounting system which, if properly administered, will put its operations on as firm a business basis as the accounting brains of the country could make possible. The maintenance of this system is the "business issue of the next administration." Those readers of the REVIEW OF REVIEWS who are concerned over the business methods of their own communities will do well to obtain from the Comptroller, 280 Broadway, New York City, the fifty-page pamphlet which contains a general description of the new system of accounting and reporting. Likewise mayors and comptrollers, university and city libraries will do well to attempt to secure in addition the manual of accounting and business procedure (600 quarto pages), which contains forms and documents and detailed description of their use. Although published for the guidance of the officials and the clerical staff of New York City, this document will prove serviceable everywhere. It has the force of an ordinance and must be faithfully executed until amended, after a more effective method of reaching the same administrative end is proved. In making any change the next Comptroller must state such change in writing and assume official responsibility therefor. This accounting reform is the product of three years' co-operation between the Department of Finance and the Bureau of Municipal Research. Before its final adoption three accounting firms were paid to find if anywhere it fell short of the best business practice. During its installation it was critically examined by a committee of experts representing the Chamber of Commerce as well as by the following consulting experts for the Bureau of Municipal Research: Messrs. William Mahl, comptroller of the Harriman systems; Martin P. Blauvelt, comptroller of the Erie Railroad; Richard T. Lingley, treasurer of the American Real Estate Corporation; W. W. Stevenson, comptroller of the Mutual Life Insurance Company; Leon O. Fisher, auditor of the Equitable Life Assurance Society; Fredrick B. De Berard, statistician for and representing the Merchants' Association.

At the very time that placards in the interest of the Democratic political organization declare that the new accounting system caused confusion Democratic administrators are installing and enforcing the new system. Almost as though there were no campaign the Comptroller has issued the two documents above mentioned. What more paradoxical than that Republican-Fusion candidates are trying to keep away from the Democratic candidates credit from which the latter are running away! The significance of these changes it is not necessary to emphasize further than to state for the lay reader that such a system efficiently administered will tell where and when may occur such waste and inefficiency as are above listed.

A PREMIUM ON EFFICIENCY.

One result will encourage those who have not learned that a large proportion of public employees prefer to render full service for their pay. The attitude of employees toward their work is notably changing. Many men exist who are willing to enjoy and to flaunt the fruits of corruption and

"honest graft" so long as there is doubt in the public mind as to the time, place, and character of the acts by which their personal profit is obtained. Few men, however, exist who are willing to face their neighbors when the fact of dishonesty and of incompetence can be proved so that no considerable portion of the community will question the evidence. Where an accounting system fails to differentiate efficiency from inefficiency the conditions of survival often bring to the front men who are utterly incompetent to do the work with which they are intrusted. But when a system of accounting makes it possible to pick out the goats the conditions are such that the man who is able to do the work and do it right stands out in bold relief; the center of equilibrium shifts to him. Such has been the result in many New York offices. New York's experience proves that an efficient man can fight harder and more effectively to retain a system which recognizes and exposes to view his fitness than can an inefficient man to retain a position which conceals his unfitness.

NEW IDEAS OF INITIATIVE AND RECALL.

The office of Commissioners of Accounts, fruit of the reaction against Tweed, had fallen from being the investigating eyes and ears for the Mayor to mere blinders and earmuffs. No one looked four years ago to that office for protection or information. Its studies and its comments rarely reached the public except when a "whitewash." To-day that office is the embodiment of the city's right and duty to exercise the initiative and the recall at their best. Recognition of the citizen's right to public documents; proof that his initiative will prompt efficient official examination and report of the facts; success in securing the recall of officials forced by documentary evidence to be incompetent and wasteful,—these are three notable triumphs of McClellan's administration. Initiative in discovering where energy is wasted through efficient examination of public records is vastly more important than initiative in making more laws. The recall which enables any citizen or any body of citizens to force the removal of any public official on the ground that he is inefficient is again vastly more important than the recall which requires a large number of petitioners and the turmoil, excitement, confusion, and expense of an election. Intended as eyes and ears for the Mayor, the office of Commissioners of Accounts has developed into eyes and ears for any citizen who can submit due cause for an inquiry.

INCREASED DEMAND UPON PERSONALITY.

The public is beginning to see that it is very much easier to get into agreement over policies than over men, over acts than over promises. The present campaign has taught this over and over again. In striking contrast to the aggressiveness of its "chamber of horrors" were the first two meetings of the Committee of One Hundred, which were as pathetic fiascos as are seen in politics. Instead of saying what they meant, asking definite questions, discussing definite pledges, they were trying to beat politicians at the latters' own game by guessing at personalities and attempting to interest followers in the character of leaders rather than in the problems to be solved. The Anti-Fusion exhibit, next door to the Committee of One Hundred's "chamber of horrors," shows that wherever campaign issues are taken from official acts, rather than personalities, the party which assumes responsibility for these acts must stop to discuss, deny, explain, or pledge correction. Fusion did not become a burning reality until it was recognized that the reason for fusion existed even after the opposition had decoyed its candidate.

Had taxpayers' bodies started out with a definite list of things they demanded to have done, they could have become a vital influence in the campaign. Instead, they felt that they would seem to control enough votes to justify recognition of their organizations on party tickets. They have found it impossible to unite any hundred taxpayers upon any one personality. They forgot also a second significant fact, and that is that it is impossible to disunite any hundred taxpayers by a political appeal upon such definite issues as whether or not revenues paid in shall be received by the city, requisitions issued before money is spent, public concessions leased for their full value and not one-half their value, or budgets based upon proof of need.

The selection of one of the present Commissioners of Accounts, Mr. Mitchel, on the two fusion tickets demonstrates again the public's desire to interest itself in things done. Several factions split on personalities because labor mistakenly believed that its protection depends upon having a labor man in office rather than upon having in every laboring man's head knowledge of what all officials are doing for or against all who labor.

To measure up to definite expectations of

things to be accomplished a very much higher type of personality is required than to satisfy an indulgent, gullible, vacillating, uninformed public with indefinite expectations.

Furthermore, very much abler men will undertake office when there is some chance of proving worth and disproving unfounded charges. Had fusion begun by proving the task too big for any man in town, instead of by searching for men who would adorn the task, it is likely that keen competition would have resulted for recognition as the man for each place.

SOME NECESSARY NEXT STEPS.

New York must have subways, adequate school facilities, a businesslike administration, playgrounds, a sustained anti-tuberculosis campaign, etc. But these are ends, not steps. The most important step and the least customary of all is to ask questions. For example: What does New York owe? How much may she borrow without increasing the 10 per cent. debt limit? Need the Court of Appeals have taken so long to answer these questions that an important constitutional amendment must be favored or opposed in the dark as to essential information?

The Bureau of Municipal Research has formulated three sets of tests and steps in three publications: "What Should New York's Next Mayor Do?" "What Should New York's Next Comptroller Do?" "How Should Public Budgets Be Made?" Several prominent men and a few editors have protested that only a paragon could take all those steps. On the contrary, not even a paragon could take any one of them without taking them all. The next administration cannot succeed unless it goes about the city's finances as a great railroad builder goes about locating *not leakage but leakages, not incompetence but incompetent employees, not profitable lines of effort but profits.* The next city and borough and county officers will find at hand not only means of learning how to be efficient but a public equipped to learn promptly in how far and where they are efficient or inefficient. A sufficiently large number of citizens are determined to be efficient in the business of citizenship, to encourage and to insure increasing efficiency among officials. Future mayors and comptrollers should direct subordinates and not rubber-stamp employees' decisions.

Be it conservatism or radicalism, Democratic or anti-Democratic-fusion forces that shall commit the country's metropolis to municipal ownership, construction, and operation of subways, a demand will sweep the country for municipal construction, ownership, and operation of transportation facilities everywhere, and will everywhere strengthen the demand for municipal socialism. If a majority of New York's Board of Estimate are committed to "equal pay for equal work," teachers' salary agitations will likewise sweep the country. Whatever the attitude of New York's next Mayor toward woman's suffrage, the enthusiasm of the suffrage movement will be affected. If appreciable numbers of the electorate in New York are influenced by lantern-slide or other graphic presentations of waste and inefficiency, by live elephants and monkeys denunciating "slander against New York," and by brass bands, parodies, and "purity" statues, the exhibit method will unquestionably be promptly adopted in other cities. If it turns out that an electorate with definite knowledge as to specific conditions, specific needs, and specific corrective steps gets better results from its public officials, educational campaigns will be liberally supported, and elsewhere definite statement will supplant generalization. If clear vision is made easier because of budget hearings and discussions, officials and civic leaders will want other cities and States to adopt budget reforms.

As Mr. Harriman once said in speaking about the possibility of New York City being put on a business basis: "If we win in New York, we shall have proved it possible for every city." Unfortunately the same must be said also of her wrong steps, for the gap between her beginning to do and discovering results is so great that waves of imitation irrevocably commit other cities to her example. It is too early to expect New York voters to consider their responsibilities to the nation. But it is not too early to demand of leaders of public thought, commentators and students, when analyzing the forces at work in this campaign and its results, that they make clear which of New York's steps are forward in the right direction, which are backward in the wrong direction, and which are marking time. For the country at large it is indispensable that the gap be clearly defined between what New York may want and what is right, and between what New York may believe and what New York has proved.

ENGLAND AND GERMANY—PEACE OR WAR?

BY DR. GERHARDT VON SCHULZE-GAEVERNITZ.

(Pro-Rector of the University of Freiburg.)

[If this panic crisis in the relations of England and Germany is to pass harmlessly it will be due in part, at least, to the new pro-rector of Freiburg University, Dr. von Schulze-Gaevernitz. Frankly and fairly he has stated to Germans the real facts of the deadly rivalry between the two nations. And he has been a powerful advocate of peace. His vigorous words have produced more than the sensation of a day; they have profoundly impressed the common sense of Germany by their earnest sanity. His appeal is now to other nations than his own, for neither Germany nor England would make war if it had to violate the definite convictions of the world.

Dr. Gaevernitz is one of the first of the economists of Europe. A son of the New Germany, he is more a man of facts and practice than of theory. He is eager to meet men and be in the thick of workaday life. He has lived intimately with workmen, farmers, merchants,—men of the hundred classes. Upon the economic life of his own country he is the highest authority. He is master of finance through actual long experience in banking. His great work "British Imperialism and Free Trade" is the result of years of travel, residence, and industrious investigation in England. Almost a disciple of Ruskin, in his youth he was a friend of William Morris, as he is now of John Burns. He is a warring Liberal in spirit, writes for the journals of all parties, and is free man enough once publicly to have voted the Socialist ticket when a great issue was at stake.—THE EDITOR.]

TO the observant American traveling in Europe these days one deep contrast is apparent. While the German people in almost untroubled peace is working out its economic task excitement has taken hold of our common cousins across the Channel,—an excitement such as has not been known since the days of Napoleon. America, the entire world, is asking the question whether war between England and Germany can still be avoided. As a German, who has given his whole life to the study of the political and economic organization of Great Britain, I should answer that question thus: Peace is indeed endangered, but war, a war that would let loose the worst elemental passions of men and set back social reform and all progress for a full generation, is not absolutely unavoidable.

ANTI-GERMAN PROPAGANDA IN ENGLAND.

Whence the real cause of this menace and talk of war? Certainly not that the British Isles are threatened by a German invasion, for invasion, either by sea or air, is a sheer impossibility over which experts on both sides of the Channel jest. Yet this British spook-seeing has its serious side, for behind the senselessly excited masses there stands a group of leaders who largely influence the press of their country and are deliberately inflaming public opinion to the danger point. Far be it from me to condemn these British patriots for their efforts against Germany; my only purpose is to understand them. Their reasoning runs about as follows:

German industrial progress is overtaking that of England with giant strides. It has gradually amassed those stupendous aggregations of capital that first rivaled the individual capitalism of England and then grew to American dimensions. The day is now not far distant when the economic power of Germany will equal that of England, mistress of the world and still its leading banker and creditor. Then the two-power standard for her navy will have become financially impossible. With purely economic development British sea dominion must pass away,—melt under the veritable sunshine of peace. To-day, perhaps,—but not to-morrow,—New Germany, rising, can be struck to earth by a mailed fist. Thence comes for England, while she still has power in her hands, the great temptation to a "preventive war." By blockade and privateering they think that German trade,—70 to 80 per cent. of it sea trade,—would be all but destroyed and German wares crowded out of the markets of the world.

British sea dominion was built up in war with Spain, Holland, and France. Why should it not be perpetuated by war with Germany? And further tempting Great Britian to war is the proffered alliance of Germany's continental opponents. England's

friendship it was that rekindled the desire of France for revenge, and the hope of an English alliance has strengthened against Germany the pan-Slavic races of Eastern Europe.

BRITISH MILITARISM.

It is clear enough that not Germany, but Britain, is to-day chiefly responsible for the overwhelming armament of Europe, the result of the militarism that has been driven to such extremes. Figures prove it. By hundreds of millions British expenditures for army and navy have always exceeded those of Germany,—Germany become notorious for her military passion. The tension between the two nations has been still further strained by the latest British naval program, and the fact that Lord Roberts' plan for universal compulsory military service is now, after eager debates and to the great joy of the French, an easy probability of to-morrow. Not against France, not against Russia, not against America is this vast armament, the greatest in the history of the world, prepared. It is an arming against Germany.

WHY GERMANY IS POWERFULLY ARMED.

Next I ask whence should come hope of peace? Not certainly from the calming words of peace advocates, but from England's fear of such a war. Truer for Germans than for Americans, the rulers of an impregnable continent, that hard word of Roosevelt's: "Nations that are unable to defend themselves invite attack." Peace and friendship in this rough world of ours often depend on the impossibility of obtaining by force greater results than can be had by agreement and concession. Respect for a power that it could not attack led England to recognize the economic and political needs of the United States as a world power; and only a similar respect can induce the Briton to reconcile himself definitely to the rise of Germany among the powers of Europe.

And so in view of our dangers of geographical position and uncertain treaties, we have marshaled a great land army effective for defense against the two most powerful nations in Europe. Its growth has followed national increase of wealth and population. And instead of being crushed by its arming, the economic life of the German Empire has thereby gained new energies, finding in its army a splendid disciplinary and educative training school for modern industrial life,—its new enterprises and its vast scale.

THE GERMAN FLEET.

And there is the German fleet. Its building is not, as often thought, the work of one man. In the beginning, it is true, its inspiration was the Emperor William, and he it was who urged the plan to the acceptance of the German people. But now our fleet is being built not by the Emperor but by the nation. The Imperial Navy League numbers a million members,—numbers them among both political parties, the Right and the Left. Among Conservatives the idea took root in spite of their theory of a self-sufficing agricultural state. And on the Left the Manchester spirit, which hoped to decide the conflict of nations by the market price, in its turn felt the force of national necessity.

No peace tribunal nor disarmament treaty will deter us from carrying out our naval program, for this so-called disarmament, on the basis of to-day's equipment, would leave the British unquestioned masters of the sea and by treaty establish their power forever.

GERMANY'S FINANCIAL RESOURCES.

Nor even in the building of her great fleet will Germany ruin herself financially. Those who argue such national poverty are easily answered. Taking only a superficial view, they have compared the brilliant state of British finances with the chronic deficit of the German Empire and its growing indebtedness even in times of peace. In England by Gladstone's model organization of national finance the necessaries of life are untaxed, and the expenses of government are chiefly paid by direct taxes on the luxuries of the masses,—the greater part being furnished by alcoholic liquors and tobacco. The fiscal difficulties of Germany arise not from lack of wealth or taxable objects of indulgence but from a national unwillingness to assume taxes. Furthermore, in consequence of unsettled constitutional questions, in Germany crown and parliament are ever haggling over taxes, exactly as they did in England in the days of the Stuarts. Yet for all this, her wealth is nigh boundless and her power well tried. With full ability, therefore, to accomplish our purpose we are creating a navy strong enough to make England hesitate before attacking us.

REAL STRENGTH OF THE GERMAN POSITION.

Happily, as against the uncertain play of war, Germany has decisive powers of defense in her very position, geographical and polit-

ical. About one-third of all German sea-going commerce passes out through the ports of the Rhine. To subdue Germany England would have to blockade the mouths of the Rhine and violate the neutrality of the Netherlands, her own creation. Then, in case of war, it is possible that England's victories at sea might well be offset by French defeats upon land. Neither nation can destroy the other utterly, and certainly by no league of nations can sixty millions of Germans be swept from the world's stage in a day. At the worst, even with the arteries of commerce closed, Germany might still be able to finance Russia's Asiatic politics or organize a federation of the Mohammedan world.

WHY GERMANY DOES NOT SEEK WAR.

And Germany? The thought of attacking England is far from us. Those who doubt it deem us not only scoundrels but fools. For what could Germany gain in war when it is rising so rapidly in peace? What could Germany gain in war, above all, with England? The so-called British colonies are independent democratic nations, that England does not hold in property right and consequently cannot cede. For India the question is not a choice between Briton or German for its ruler. Its future will be either British or Asiatic. Australia is overshadowed by the power that to-morrow will dominate the Pacific Ocean,—Japan perhaps, perhaps the United States,—certainly not Germany. And war would cost us Germans the best of our markets, a market that even to-day is worth one billion marks annually. This is our determining argument for peace.

ENGLAND'S GREATEST INDUSTRIAL RIVAL.

The expansion of Germany in recent years has been marked by a tremendous development in industry, and so in wealth and power. Her population has increased by one-half since 1870, and among the leading nations of Europe her birth-rate is relatively the highest. Yet to-day her narrow boundaries limit her expansion to an intensified industrial life, and thus only in a mediate way can she share in the progressive development of the world. Her necessities for further growth are imperative.

Incomprehensible to many of our contemporaries, the most fabulous change is taking place before our very eyes. Mark its significance. In the eighteenth century Germany had no exports whatever to balance the importation of luxuries for her several courts. Aside from her bales of linen, the ships that left Germany went ballasted in sand,—sand, which the French jeeringly called "*le produit d'Allemagne.*" National poverty continued throughout the greater part of the nineteenth century. States grew up that were famous for poetry, music, philosophy; but this was far other than the creative civilization of wealth.

It was during years yet recent that Disraeli, in his "Endymion," pityingly pictured the German diplomat who went from the world's metropolis and its society of illustrious dames and world mastering statesmen back to his exile of home. His people's only wealth was their wooded plains and hills. They needed a fatherland, got "by blood and iron," were his prophetic words. To-day like Midas, the king, Germany touches unseemly raw stuffs and under her hand they become coinable gold,—Germany, the new industrial state, rising in greatness, and soon, perhaps, to equal the colossal power of England!

For our grandfathers such a prophecy would have seemed the illusion of madness, and yet there are Germans who doubt the future. Others of our countrymen, blinded by the glitter of the golden rain, forget the spiritual sources of the down-streaming bounty. They are wholly lost in wonder at the magical growth of our industrial life and see nothing even of political causes: Sedan and the Proclamation of the Empire, when they crowned the Kaiser in the Hall of Mirrors at Versailles.

This growth so marvelous has made Germany the first commercial and industrial rival of England in many parallel lines of production. In her exports of iron and manufactures of iron she is already a competitor on equal terms, while in the eighties she seemed left forever behind. In mere production of iron and steel she has already outstripped Great Britain. Her progress has continually been filled with menace and damage, sometimes disaster, to British commerce.

Take the single striking case of indigo,—a flourishing branch of Indian trade that has fallen to ruin. It was one of the great staples of India and had been the important means of placing the raw material production of the Indian empire on a basis of money exchange. At the beginning of the nineties the total crop of indigo was estimated from $20,000,000 to $25,000,000, with both culture and trade almost exclusively in English hands. But in Germany science progressed,

the output of coke wonderfully increased with the spreading iron works, and the new nation acquired the raw material for manufacturing coal-tar dyes. To-day the Germans by chemical processes make three-quarters of all the indigo used in the world. The total yield of indigo in India has meanwhile fallen to a quarter of its former amount. Since 1903 England has imported from Germany more indigo annually than her average yearly purchase from Calcutta in the years 1881-96.

ENGLAND HAS GERMAN ADMIRERS.

The bitterness of such struggles,—and there have been many of them,—makes for war; the patronizing condescension of the average Englishman in the presence of things German is a constant irritant. But other causes make powerfully for peace. The old German Liberals were blind admirers of English life, and even to-day there are those for whom anything English,—simply because it is English,—appears desirable and superior. Even to-day there is an increasing demand for the luxuries of England. The disappearance of French customs in German life and the growing popularity of English ways, which is taking place with compelling power, mark the return to the fundamental similarity of the two nations.

ENGLAND WANTS THE GERMAN MARKET.

And there is the question of self-interest. Germany's need of foreign markets must continue to grow, and for England the market of Germany is to-day more important in actual sales than that of the United States. Yarns, textiles, machinery it imports in great quantities. Characteristically English products, like fish and ships, are exchanged for about the same value of characteristically German products, such as aniline dyes, pianos, and toys. German open-sea fishing yields but one-third enough for domestic needs.

As compared with England, Germany is becoming more and more an exporting nation. Next to Great Britain no nation has so great an interest in maintaining an open foreign and colonial market for the sale of her home manufactures. In the textile industries a very complex division of labor is making its way, by which Germany is seizing the lead in second quality products. The British export of coal to Germany nearly equals the export to England of German sugar, with its higher labor content. But these salient facts apart, if, after all, the English market is to-day more important to Germany than the German is to Great Britain, the reverse is true if the British Empire is considered as a whole. Of all the nations of the earth Germany is the largest purchaser of the raw products of Great Britain, having indeed through excess imports an unfavorable balance of trade. For many British colonies Germany is the dominant purchaser, and against them has power of retaliation. Here is reflected that gigantic change in the economic life of the British Empire which is gradually but surely unfolding.

How else should these vast territories pay interest and tribute to England if not by exporting their raw material to industrial lands? Great Britain herself in this colonial traffic has the balance of trade slightly against her. And though her colonies prefer British made goods, it is imperative for them to maintain payments on their unpaid debts by exports to non-British industrial lands. And among these Germany is the most important.

THE MARITIME BALANCE OF POWER.

The building of the German navy suggests at least this: That it is better to make treaty with the invincibly strong than with the weak and declining. Between equals the question of disarmament at sea could be seriously discussed, disarmament for us possible only on the basis of a balance of power between the great nations. England, the United States, Germany, Japan, France, and possibly ultimately also Russia and China, will represent in the twentieth century the single nations that would form such a system of maritime balance of power. The age of dominance at sea by any single nation is approaching its end, to the advantage above all of the United States, for the Monroe Doctrine was never safe from attack under the dominance of a single state. With a balance of the powers, if Germany chose to challenge the Monroe Doctrine,—a thing of which no German thinks,—she would have against her not only the American but certainly also the British and possibly the French fleet. She would thus face sheer impossibility.

Germany wishes for nothing but the peaceful competition of all nations in industry, science, and art. Germany has not forgotten that her greatest thinker, Immanuel Kant, held up to her "eternal peace,"—*ewigen Frieden*,—as a distant, but not on that account irrational ideal. In the interests of this peace my words, appealing to the American sense of fairness, present this German view of the greatest of international problems.

LEADING ARTICLES OF THE MONTH.

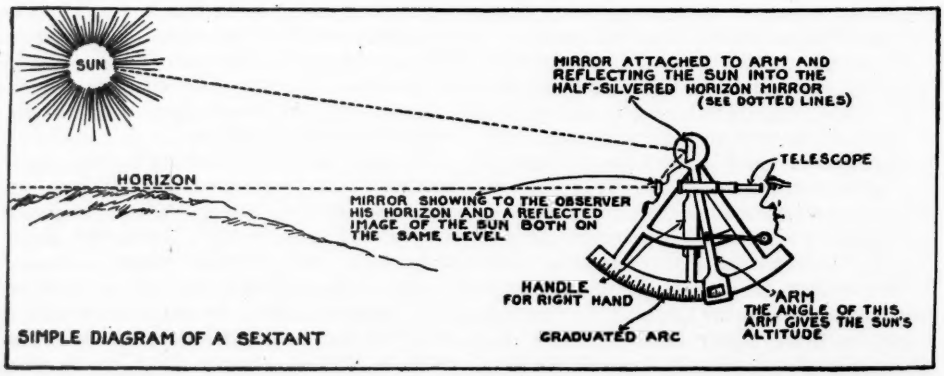
HOW TO KNOW WHEN ONE IS AT THE POLE.

IN the numerous discussions of what may now be termed the polar question it is often the case that doubt is expressed as to the ability of the explorer to determine when he has actually reached the Pole. The Paris journal *L'Illustration* having been asked by one of its readers how it is possible to tell when one is "exactly or approximately at the point representing the terrestrial Pole," a writer signing himself "G. B." essays to answer the question "as clearly as is possible without the aid of mathematical formulæ." "It must be borne in mind," says this writer, "that the position of any point whatsoever on the earth is determined by two data,—longitude and latitude. The longitude of a place is the angular distance of such place from a meridian adopted as a starting-point." This prime or first meridian is commonly that which passes through Greenwich, England, but sometimes is that of the local capital, as in France, Paris, and in the United States, Washington. But at the Pole "all the meridians merge, so that one has no longer to consider the question of longitude." Latitude is the distance of a place from the equator measured in degrees of the meridian. It is reckoned from 0 to 90 degrees, starting from the equator toward either Pole, according as the place is situated within the Northern or the Southern Hemisphere. To prove that one has reached the Pole it follows that he must be assured that he has reached latitude 90 degrees.

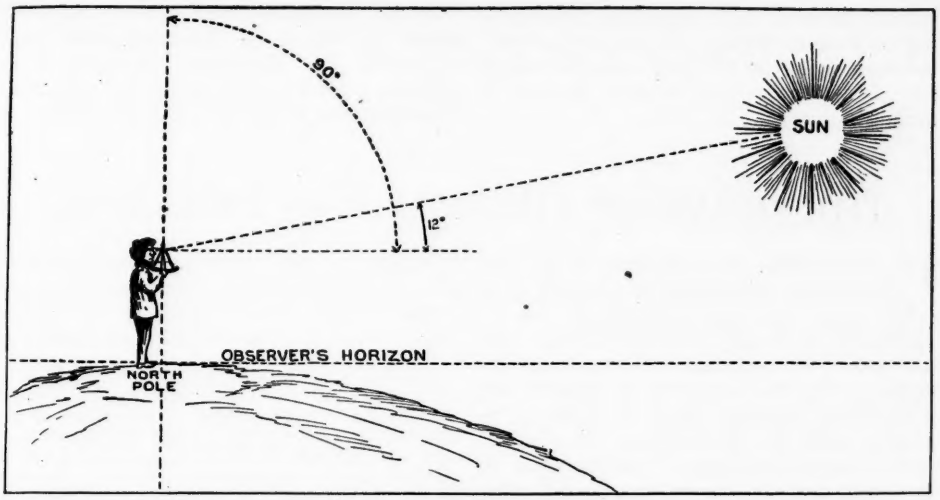
To determine the altitude of a place many methods are available; but most of them involve the use of instruments which are bulky, difficult to transport, and delicate to operate. There are not many instruments which can be depended upon for reliable service at the Pole under the difficult conditions amid which they must be operated, admitting that it is even possible to convey them thither. The practical instrument for the purpose and conditions is the sextant. Dr. Cook has distinctly stated,—at least the newspapers have announced,—that the instruments at his command were a sextant, an artificial horizon, and a barometer. Doubtless he had likewise with him a thermometer, since he has recorded some of the low temperatures experienced in the course of his voyage. These instruments are complementary to one another, the last three being indispensable to the proper use of the first.

The ordinary sextant,—that used by mariners,—is held in the right hand by a handle; but in such case it is far from being an instrument of extreme precision. For observations on land it is preferable and surer to mount it on a stand.

To ascertain the altitude of the extreme point reached by him, Dr. Cook had "two methods at his disposal: one, called the cul-



WHAT THE SEXTANT SHOWS.



OBSERVING THE SUN AT THE POLE.

mination of the sun; the other, known as circum-meridian observations, and based on methodical and minute observations of the stars, including the Pole-star. But at the North Pole, from March 21 to September 22, the sun is above the horizon, and the stars are therefore probably invisible, at least to the naked eye. Dr. Cook has said that he reached the end of his journey on April 21, 1908. We may accordingly assume,—bearing in mind the uncertainty as to the visibility or invisibility of the stars,—that he relied solely on observations of the sun. This was moreover the simplest operation, since a single observation, followed by elementary calculations, would give the desired results."

Each day at noon the sun attains the highest point of its apparent course toward space, its culmination; and "at the approach of this hour the explorer prepares for his observation." The *Illustration* writer gives a detailed description of the process of taking an observation of the sun by means of the sextant, which, owing to limitations of space, cannot be reproduced here, and states that "the angular altitude of the sun above the horizon on April 21, which should be that recorded by Dr. Cook, if he was at the Pole on that date, was 12 degrees." The observer has to correct his observation "for (1) errors of his instrument,—known to each observer after carefully verifying his apparatus,—also for (2) refraction, and for (3) parallax of the sun. After these simple mathematical operations the observer finds himself in possession of the height of the center of the sun above the horizon, seen from the center of the earth at noon. The complementary angle of this altitude,—the difference between this altitude and 90 degrees,—is the zenith distance of the star,—that is, its angular distance from the zenith. To obtain the latitude it remains only to add to this zenith distance the declination of the sun,—that is to say, its angular distance to the zenith from the Pole."

But for observations by means of the sextant the first condition necessary to obtain the height of the sun is a real horizon; and "at the Pole, on the confines of the frozen sea, bristling with blocks of ice, there is no horizon. It is necessary, therefore, for the observer to have recourse to an artificial horizon. This is a mirror of blackened glass set in a copper mounting on 3 feet, furnished with adjustable screws. Perfect horizontality of the mirror is obtained by means of an extra-sensitive level."

As has been stated above, to ascertain with mathematical accuracy that he is actually at the Pole the observer must be able to determine with precision latitude 90 degrees, and with the sextant such an observation is practically impossible. It will be recollected that Dr. Cook announced that his last observation showed that he attained latitude 89° 59′ 46″. He was then 14 seconds, or 434 meters, from the Pole. "I covered," he said, "those 434 meters." But even if he had attained a precision within 5 seconds, which, according to authorities whom "G. B." consulted is possible to experts in the use of the

sextant, he would still "have had, after turning his back to the sun, 155 meters to travel before arriving at the goal,—a discrepancy scarcely worth caviling about at the end of such a journey."

In the *Illustrated London News* for September 11 Mr. L. C. Bernacchi, who was physicist to the "Discovery" Antarctic Expedition, gives a similar though less exhaustive explanation of this interesting problem.

THE SEDAN OF LIBERALISM IN HOLLAND.

IN a year when the celebration of the four hundredth anniversary of Calvin's birth might have been expected to recall and reemphasize in the minds of both Catholic and Calvinist the dogmatic differences of the Reformation, the picture of Calvinism and Catholicism clasping hands in a pact "to combat with the Holy Spirit the spirit of the French Revolution" might seem as strangely out of place as would an impressionist canvas in a Gothic cathedral. And yet this picture, with the incongruous alliance triumphant at the election in this year of Calvinistic jubilee, is presented in an article on the political situation in Holland which Dr. R. Besthorn, a well-known Danish writer, contributes to the *Gads Danske Magasin* (Copenhagen).

The alliance is not altogether new, for it has given a religious aspect to the elections, recurring every four years, for fifteen years or more. But it scored its first substantial victory at the elections held last June.

Holland is to-day the Land of the Bible,—the battleground of conflicting dogmas. One-third of the population are zealous Catholics, the rest are Calvinists of various shades. The Catholics and Calvinists are born adversaries. There are to-day many followers of Calvin who honor the old saying: "Rather the Infidel Turk than the Papist." And yet these discordant elements have found a common ground on which to combat liberalism under the leadership of Dr. Abraham Kuyper.

Dr. Kuyper, who is the founder of the University of Amsterdam and publisher of the *Standard,* is regarded as Holland's best-known journalistic agitator. He entered the fight he now has led to victory twenty years ago as leader of the Orthodox Calvinistic party. In the elections of 1901 he founded what became known as the Anti-Revolutionary party, which, joining the "Historical-Christians" party and the Catholics, formed the Conservative wing of the Dutch electorate. It was in 1901 that he promulgated his platform in which he roughly divided the political parties in "Christians" and "Heathens," the "Christians" being the Conservatives and the "Heathens" the Liberals. His anti-revolutionary program is outlined in a speech he delivered at Siedrecht during the 1901 campaign. From this the writer quotes:

The battle we conduct should be a fight for principles. Our warfare is directed not against the Liberals as individuals, nor against their interests,—we make war on the liberal conception of life and of the world. The Liberal party is almost everywhere in Europe a doomed party. It still controls in France, but there in reality liberalism is not liberal. The Liberal party is from its very origin "non-Netherlandic." It is an offspring of the French Revolution. This revolution has done some good, but that is no reason why we should justify the French Revolution as a revolution. Its guiding principle was evil,—it was "*Ni Dieu, ni maître.*" The liberalism is contrary to God's decrees. . . . Does there exist an Almighty God or not? If the answer be in the affirmative, then we must worship God in the family, in the State, everywhere. The Liberals are seeking to weaken the sovereignty of God. In the Chamber I have never heard any reference to God's authority. The spirit of materialism is weakening the people. Christian morals are wrecked by the Parisian spirit. The Holy Spirit must combat the spirit of the French Revolution that the people may be blessed.

In the campaign that came to a close last June Dr. Kuyper still held to the former division of the political parties into "Christians" and "Heathens."

Dr. Kuyper conducted the campaign with great energy. In the most forcible language he summoned the "Christians" to combat the "Heathens." "Will you kneel with us before the image of the Christ?" he cried.

The election was held on June 23. The result indicates how well gauged was the appeal. The election has been called "the Sedan of liberalism in Holland." Out of 100 districts the Conservatives carried 60, the Liberals, who had been in the majority, 40. The Conservative seats in the Second Chamber were divided between 25 Catholics, 23 candidates of the Anti-Revolutionary party, and 12 "Historical Christians." From the other camp the Liberals returned 25, the Democrats 8, and the Socialists 7 members of the Chamber.

FLYING IN AN AEROPLANE.

IN connection with the group of articles published in this number of the REVIEW OF REVIEWS relating to the construction and use of aeroplanes the experiences of Mr. Glenn H. Curtiss, the American winner of the recent contests at Reims and Brescia, are of special interest. A brief record of these experiences appears in the October number of *Motor*. In the article which he contributes to that publication Mr. Curtiss confesses his faith in the possibilities of flying machines for pleasure and sport. The air, he says, is the great public highway. In the upper atmosphere there are no speed laws (as yet), no rough or dusty roads, no railroad crossings, fences, ditches, or hills, while the aviator is assured of plenty of oxygen, the best of scenery, and an exhilaration not to be gained by any other mode of travel.

Coming down to the practical aspects of aviation Mr. Curtiss records his opinion that the successful operation of the steering device of an aeroplane is only a matter of skill on the part of the operator, which can be gained by practice. By steering Mr. Curtiss means turning to the right or left and causing the machine to glide up and down or stay on an even keel, as desired. The balance, however, is a more difficult problem. In the absence of an automatic device for preventing the machine from tipping sidewise, Mr. Curtiss has a preference for a device actuated by a natural movement, and he therefore makes use of what is known as the "shoulder control" on his aeroplanes. A light steel frame, or crotch, is engaged by the operator's shoulders, and it transmits the movement by means of wires to the controlling surfaces of the wing tips, inclining one up and the other down, thus bringing the machine back to a normal position. With this arrangement the operator has only to "lean to the high side," —that is, incline his body toward the side of the aeroplane which has become elevated. This is the most natural movement, and the shifting of the weight helps restore the equilibrium.

In the following paragraphs Mr. Curtiss offers some practical suggestions to amateur aviators:

For steering, the regulation steering wheel, such as is used on automobiles and motor boats, would seem to be preferable to the lever or tiller and would be easier for the beginner to become accustomed to. For steering to the right and left the wheel is operated in the same manner as a car or boat, and a wire cable from the wheel turns the rudder in the rear. In my machines the wheel is mounted on a post, which is also connected to the horizontal controlling surfaces in front, and in addition to turning the wheel for right and left steering it may be moved forward and backward, thus accomplishing the vertical steering by quite a natural movement.

To illustrate, suppose the machine while in flight begins to dip forward and go down. The operator naturally tries to restore balance by moving his body backward, thus pulling the wheel back and increasing the inclination of the front controlling surfaces and bringing the aeroplane back to an even keel. If the machine rises in front against his desire it is his natural impulse to move forward, which tilts the front control down and brings the machine back once more to a normal position. With this system of controls it is not so difficult to learn to fly.

To make a good landing is the most important point in aeroplane operation. An amateur is all right as long as he can keep away from the ground. An aeroplane, like a bird, should always alight headed into the wind. Birds invariably do this. I have found that my best landings are made by keeping up the power and flying along within a few feet of the ground before shutting off. In this way the shock is very slight, no matter at what speed the machine is flying, as the contact with the ground is made at such a slight angle. A good landing may be made after gliding down from a height, but it is much more difficult than to land with the propeller in motion.

Ordinarily an aeroplane should be equipped with just sufficient power to fly it, which is really the most sensible plan, as there are no hills to climb and no bad roads to encounter, and for ordinary purposes a speed of 45 miles an hour is too fast, as landings are so much more difficult to make.

Flying is like swimming, in that when once learned it is never forgotten. Flying in the wind requires the greatest skill. There is no such a thing as a steady wind; it is more or less gusty, even on the water, and especially on land and near the ground. A beginner should never make a start when the slightest wind is blowing. The moment an aeroplane leaves the ground it starts to drift with the wind. If the direction of the wind is at right angles with the course of the machine the 'plane must be kept headed diagonally into the wind sufficiently to keep on the desired course. Plenty of "sea room" is necessary for landing under these conditions.

As to the probable development of the aeroplane, Mr. Curtiss says:

We can hardly expect to see railroads, steamboats, and motor cars entirely displaced by flying machines as has been expected by some, but it would not be surprising if within the next ten or fifteen years the ocean were crossed by an aeroplane. It will not, of course, be like the delicately built machine of to-day, but a large, strong structure with a body like a boat which will float and stand rough weather.

WHAT WAS BÜLOW'S FOREIGN POLICY?

THE Berlin *Woche* devotes the first article of a late issue to an estimate of Prince Bülow's activities and achievements in the sphere of foreign politics and, incidentally, we get a bird's-eye view, as it were, of the European political situation in its recent developments.

The writer, Heinrich Friedjung, of Vienna, starts out by remarking that Prince Bülow retires with undiminished personal prestige. It is a rare phenomenon that a statesman should be as well content with the "funeral oration" of his opponents as of his friends.

The speech of the Conservative leader in justification of his party's vote in the Reichstag did not sound like an accusation; it was rather a plea in self-defense to parry the reproach that the Conservatives had, without proper grounds, caused the fall of a gifted and deserving Minister. In the chief domain of his activity, that of foreign affairs, the fourth German Chancellor met with no opposition even at the close; as, indeed, he had at no time encountered any noteworthy opposition to his external policy. In that field he was always supported by the confidence of the Reichstag and the nation. Even when it became apparent that Germany's standing as a world-power had sustained a serious blow in consequence of England's restrictive policy the blame was not laid at his door; people were inclined to attribute it to other irresponsible influences.

Up to the time of the last crisis, brought about by the annexation of Bosnia, "England's star in the diplomatic horizon was steadily in the ascendant, while Germany saw itself thrust toward the rear."

As far back as 1903 England concluded an agreement with Italy in regard to the neutrality of the Mediterranean; subsequently the important treaty with France, April 8, 1904, which was to decide about the future of Egypt and Morocco; then followed on the 12th of August, 1905, the ten years' alliance with Japan; and, finally, the crowning accomplishment, the formal division of Asia, which was consummated between England and Russia in August, 1907. And it almost seemed as if Turkey, too, would withdraw completely from Germany's influence, when England, immediately after the revolution of the Young Turks, July 24, 1908, became guardian and leader on the shores of the Bosporus. Here, to be sure, the triumphal march came to a halt, since the vigorous policy of the Austrian cabinet, in spite of English intrigues and thanks to the aid of its German ally, succeeded in getting Turkey to acknowledge the annexation of Bosnia.

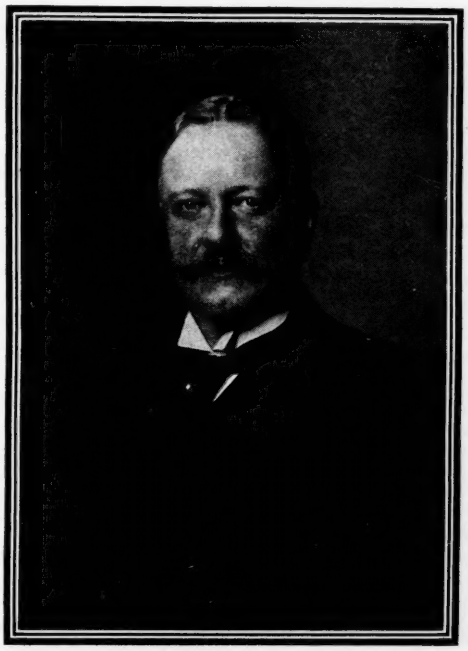
It is a problem to be solved by the historians of the future, this German writer believes, whether the diplomacy of Prince Bülow did all that could be done to prevent that network of treaties.

The truth is that the Chancellor did, indeed, faithfully administer Bismarck's glorious diplomatic heritage, but was unable to augment it. When that net was to be drawn closer during the crisis of last winter Austria-Hungary and, as its ally, Germany also presented the points of their bayonets, and thus the superfine project was frustrated. But could it not have been prevented that England, Russia, and France should enter into such close union and be enabled to contrive the plan of the fine conference which was to decide Bosnia's fate, where it was contemplated to sit in judgment over Francis Joseph,—as a punishment for the inviolable faith he had kept with his German ally?

Attempts have been made in England, the writer proceeds, to prove that Prince Bülow neglected to put Germany on a footing of friendliness that could be depended on with the island realm. In 1899, at the outset of the Boer War, when England's perplexities reached their climax, the Berlin cabinet received an offer of alliance from London; but the Chancellor declined, mainly because of the enthusiastically friendly sentiment of the nation for the Boers. In fact, no one could have advised the German Government to form a rampart for England's predatory expedition. At that time on the other side France and Russia were ready to join Germany in an action which was aimed against England. It was proposed to the German cabinet that common diplomatic measures should be taken in favor of the Boers. The Berlin cabinet was willing, as a matter of principle, to agree to this, but demanded a sort of collateral security on the part of the French; as a strengthening of the Treaty of Frankfort they were to reiterate their renunciation of Alsace-Lorraine; for it was possible that in this proceeding against England, Germany might be left in the lurch by the two other powers and would have to bear the full brunt of England's enmity. But this condition the French Government refused,—and it happened thus that after the Boer War Germany had no protection on either one side or the other. This was not dangerous as long as the two forces were not combined. But then followed the surprising Anglo-French Treaty of April 8, 1908, which placed Germany in an unpleasant predicament in regard to Morocco. It must be accounted to the credit of Emperor William and Prince Bülow that they did not allow themselves to be intimidated; they made

the forcible demand that the extension of the power of France in Morocco must be submitted to the examination and approval of the nations concerned. It could not be permitted that the two western powers should arbitrarily dispose of North Africa in such a way that, as Anatole France humorously remarked, England should give away what she did not possess. But the French Minister, Delcassé, cared nothing for treaties or justice, but hastened the war-alliance with England. He flatly declined the calling of a conference in regard to Morocco, thereby almost precipitating a war between Germany and France. The French, however, regarded such a war as a murderous folly and Delcassé was dropped July 6, 1905.

This was the zenith as well as the turning-point in Prince Bülow's foreign policy.



PRINCE VON BÜLOW.

A great success had been achieved and proof at the same time given that the military supremacy of the German Empire was unimpaired, that France feared a passage at arms with its eastern neighbor. It was also evident that the French are no longer a vain people, athirst for war, but are desirous of enjoying prosperity and civilization in peace. The question now arises whether it would not have been well if Germany had voluntarily offered them what finally fell to their share after arduous diplomatic struggles at Algeciras and through the Franco-German Treaty of February, 1909. For only then was the French-English-Russian *entente* riveted closer and closer.

Certain it is that in the last great foreign action Bülow rose equal to all the claims of political energy. While Austria-Hungary faced the dangers of a war in the Balkans, and even with Russia, with vigorous courage it found the needed backing in the aid of its German ally.

Prince Bülow, says the writer in conclusion, leaves the scene of action at a singularly auspicious moment, when the status of the Central European Alliance has, beyond doubt, been fortified without the necessity of a resort to arms. The Moroccan difficulty, too, has been settled by the Franco-German Treaty of February, 1909,—and thus Bülow's successor finds affairs in good order at his accession.

The threatening cloud in England will have to be steadily and closely watched, and it was not and is not in the power of any single individual to completely adjust the differences which are inherent in the general condition of things. On this point neither blame nor responsibility attaches to Bülow, and the next Chancellor will, like him, only be able to hold out and act as pacifier.

A FRENCH CHARACTERIZATION.

In a recent issue of the *Revue des Deux Mondes,* André Tardieu has a long character sketch of Prince Bülow, dealing with the Chancellor's home policy in the first part and with his foreign policy in the second.

For nine years, says this French writer, Prince Bülow was Chancellor of the German Empire, but he directed the foreign policy of the Empire for twelve years,—that is to say, from 1897, when he succeeded Baron Marschall von Bieberstein, to July, 1909.

With the exception of Bismarck, he held the post of Chancellor longer than any of his predecessors, and no post in Europe is more arduous or more difficult to fill. He had the happy fortune to unite in himself the two leading tendencies of German imperial politics. He was Conservative in the parliamentary sense of the word, anxious about the great national needs and the indispensable principle of authority, and he was audacious in the social acceptation of the term. He was powerful because he was at the same time for the navy and for workmen's pensions. Under his guidance the home policy of Germany remained true to its essential traditions. A constant concern about the military forces. the development of the army and the creation of the fleet; a few insurance laws; great anxiety about Conservative interests in conse-

quence of the close ties between the nobility and the throne; brutal assertion of authority over the vanquished, notably the Poles; a constant compromise between the will of the Kaiser and the will of the people; a prodigious expenditure of diplomacy at home,—these are some of the chief traits of Prince Bülow's policy. But they are also the chief traits of German policy and of the German character.

During the twelve years that he directed the foreign policy of Germany, Prince Bülow won for himself an eminent place among contemporary statesmen.

He possessed all the intellectual qualities which charm our epoch,—a perfect lucidity, a rapid perception of the needs and contingencies, brightness of imagination, and simplicity of attitude. He pleased also by his defects,—inconstancy, an inexact estimate of moral force, an obstinate resistance to argument, a real indifference to the demonstration of logic. In his diplomacy his qualities and his defects showed themselves in turn. He sometimes provoked useless conflicts, but he always retreated before their extreme consequences, proving that in him political passion found its bridle in the consciousness of human duty and in the cult of civilization.

THE LAST EMPRESS OF THE FRENCH.

THE history of France is unique among the histories of the nations of Continental Europe by reason of the extent to which it has been shaped by feminine influence. Often the destinies of the country have been held in the hollow of the hand by the legal consorts of the occupants of the throne; but more frequently they have been wielded by "the gay companions of the idle hours of emperors and kings." For centuries the morals of the French court were such as to be a byword even amid the immorality of the times; and the court of Napoleon III. included "many whose characters were not concealed by their talents or their looks." From 1860 to 1863, when the brilliant Austrian, Princess Pauline Metternich, carried the court of the Second Empire to the giddiest height of frivolity, "the dividing-line between the grande monde and the demi-monde was almost entirely obliterated." At the costume balls "all decency was often outraged," and "in point of morality there was not much difference between some of the *lorettes* who mixed in court circles and the painted courtezans who frequented the Jardin Mabille." Mr. R. F. O'Connor, from whose article in the *Catholic Quarterly Review* the foregoing excerpts have been taken, holds that "nothing redounds more to the credit of the Empress Eugénie than that she should have lived for nineteen years in this *milieu* and come out of it with her moral reputation untarnished."

Born at Granada in Spain, May 5, 1826, and inscribed in the baptismal register as Maria Eugenia Ignacia Augustina, daughter of Don Cipriano Guzman Palafox y Portocarrero, Count of Teba, and of his wife, Maria Manuela Kirkpatrick y Grevignée, the future empress was known in childhood simply as Eugenia Palafox. Her father subsequently inherited the title and the ample means of his brother, the Count de Montijo. In 1834, when the cholera was raging in Spain and there was also dangerous political agitation in Madrid, the Count sent his family for safety to France. The little Eugénie, as it will now be convenient to call her, was therefore eight years old when she first set foot in the country in which she was for nineteen years to reign as Empress. In 1839 her father died, and she was then sent to a school at Clifton, near Bristol, in England.

The widowed Countess married her elder daughter Francisca to the Duke of Berwick and Alba, and then cast about for a desirable match for the younger one. Eugénie was exceptionally beautiful. Prosper Merrimée speaks of her when about eighteen as "marvelously beautiful, with just that shade of hair that Titian loved." Later the American Minister at Madrid said: "Looked upon simply as a woman, she was the most perfect creation I have seen anywhere."

There is some doubt when she met Napoleon for the first time; probably it was in 1849, when the Countess de Montijo and her daughter returned to Paris. Napoleon soon became infatuated with "the handsome Spaniard"; and after an ardent wooing, and "despite the disapproval of his family and the opposition of his ministers, the imperial suitor was true to his plighted word," and the marriage took place January 30, 1853. Of her career as Empress Mr. O'Connor remarks that "the searchlight of criticism, though often projected upon her with malevolent intentions, failed to reveal any big blots."

The worst fault they could impute to her was setting a pernicious example of luxury and fre-

quent changes of fashion which all France followed, though she assured Dr. Evars, of Farnborough, that she never spent more than 1500 francs on any dress, and stated in a letter to an American friend that only three times in her life did she wear a dress that cost as much as forty guineas, one being her wedding dress and another her costume at the baptism of the Prince Imperial.

Against the magnificence and extravagance of her court must fairly be set her numerous charities, the full extent of which can never be known. She divided the 250,000 francs included in the Emperor's wedding present among the maternity societies and the Incurable Hospital; and the popular collection of 100,000 francs (made up of five-cent subscriptions) for a present to the Prince Imperial was at her wish employed in founding the Prince Imperial Orphanage. She gave not only her money but her personal service also.

During the cholera epidemic of 1866 she won the admiration of all France by her heroism. The scare was at its height at Amiens when she arrived there. She immediately "went under fire," as she expressed it, visiting the victims in hospital and showing herself without the slightest fear of death. . . . A few months later when she appeared at Nancy to represent the Emperor . . . tales of Amiens were on every one's lips. Her slanderers for the moment were dumb.

A devout Catholic, both by birth as a Spaniard and as Empress of France, she was bitterly opposed to her husband's anti-papal policy. Unable to prevent the alienation of the papal states, she secured for a time the continuance of the French garrison in Rome. She was three times Empress Regent: in 1859, during the Emperor's absence in the campaign against Austria; in 1864, when the Emperor visited Algeria, and in 1870-71, during the Franco-Prussian War. At the time people called the last conflict "her war"; but "all the world now knows it was long foreseen and arranged by Germany." The Empress' conduct during the trying autumn of 1870 has been described by Merrimée as "truly saintly" and deserving of "all admiration." She turned a great part of the Tuileries into a shelter for the wounded and divided her time between the Council of the Regency and hospital work. When the end came the departure of the Empress from the palace was so hurried that she left "without even a handkerchief." The services rendered to her by the American dentist Dr. Thomas Evans in enabling her to reach England "earned for him the title of 'the one hero' in her career."

THE EMPRESS EUGÉNIE.

Mr. O'Connor closes his article with an eloquent passage, in the course of which he observes:

The ex-Empress, now in her eighty-fourth year and bereaved of husband and son, has . . . long outlived the empire of which she was the *decus,* if not the *tutamen,* her goodness and grace counterbalancing its mistakes and misdeeds; fairest of the fair among all the court beauties of her reign, a vision of loveliness amid much that was unlovely. She has lived and moved in the Vanity Fair held betimes at Saint Cloud, Compiègne, Fontainebleau, and the Tuileries. . . . All the splendor and profusion have vanished like a dissolving view; revels and revelers have passed away, while one who filled a leading part among the *dramatis personæ* . . . must have realized in the retrospect of a long life the truth of the words: *Vanitas vanitatum, et omnia vanitas.*

Dr. Evans has related in his "Memoirs" the exciting narrative of the Empress' escape to Trouville and thence across the Channel to England in Sir John Burgoyne's yacht. Before she reached the coast the Third Republic had been proclaimed.

It was not long before France saw two of her finest provinces wrenched from her by the victors, who imposed a war indemnity that would have crushed any other nation. Then came the *année terrible,* when the Communists held Paris until dislodged by the Versailles troops after the massacre of their hostages, including Mgr. Darboy, Archbishop of Paris, who had celebrated mass for the Emperor and Empress and Prince Imperial on the eve of the departure for the seat of war of the first and last named, who were fated never to return.

A SCULPTOR OF THE WEST.

THE STATUE OF ALASKA, PERSONIFYING "MINING."

FINN H. FROLICH, commissioner of sculpture for the Seattle Exposition, is a Norwegian, although he has lived most of his life in America. He is a picturesque character and a man of parts. He came under the notice of D. C. French, the distinguished American sculptor, as a boy, serving French as studio boy for a number of years. Mr. French then sent the Norwegian lad to Paris for a course of study at the Beaux Arts.

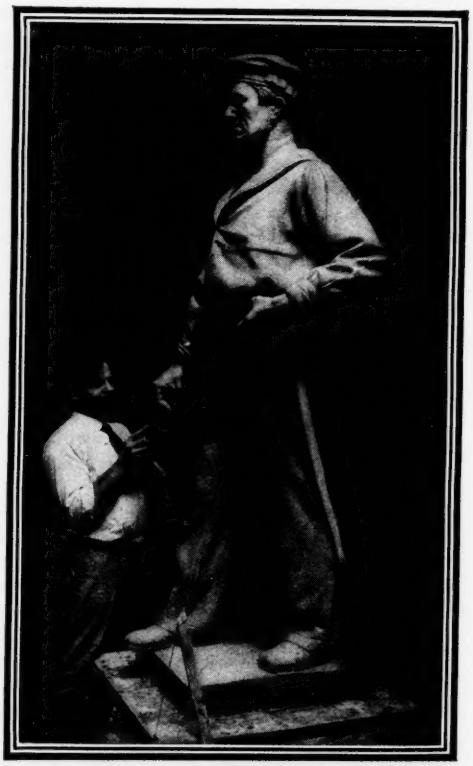
After Mr. Frolich's return from his studies at Paris he worked for six years in the studio of Mr. French, assisting this sculptor with many important commissions. He helped to make the great 70-foot statue of the "Republic," and he assisted in the building of the quadriga for the peristyle, two important works still remembered at the Chicago World's Fair.

The Norwegian sculptor afterward assisted Perry with the "Fountain of Neptune," placed in front of the Congressional Library at Washington in 1897. He returned to France in 1898 to assist in the making of the Proctor quadriga on the American building at the Paris Exposition.

In 1898 Mr. Frolich went to Seattle, and it was in that year he established his School of Design, which is now an interesting colony of about a hundred artists. Mr. Frolich believes that there is a demand for a greater school of Arts and Crafts, such as was founded in London in the '70s by Burne-Jones, William Morris, Rossetti, and the other Pre-Raphaelites. He expects to interest certain Western financiers in his project to establish a similar school in Seattle.

Frolich's earlier achievements include a great head of Kruger, made just before the Boer War, when his spirit of adventure took him to Africa. Afterward he held a commission in one of Kruger's regiments. Soon after that he made a portrait statue of a Zulu chief's daughter, the first such work ever done from life, and in return for which the old Zulu chief promptly offered his daughter. There is, however, no record that the sculptor ever brought the dusky lady home as an African trophy.

Mr. Frolich made the strikingly hand-



MR. FROLICH AT WORK IN HIS STUDIO.

some medal which was distributed among the Norwegians of this country a few years ago commemorating the coronation of Norway's King. He also did much important work for the world's fair at St. Louis.

Mr. Frolich's most discussed contribution to the Alaska-Yukon Exposition is his great bust of J. J. Hill, presented to the fair by the people of Minnesota, and unveiled on August 3, "Minnesota Day." Mr. Hill posed for the bust at his home in St. Paul in the early summer. The work is of heroic size,—the largest ever cast in bronze.

Another fine example of Frolich's work at the exposition is a monument to the Norwegian composer Grieg, the gift of the Norwegians of Seattle. In gratitude for his efforts in their behalf the fellow-countrymen of the sculptor have given him the *Viking* ship built for the fair by the Norwegians. This Mr. Frolich expects to fit with an engine to use for cruising next summer.

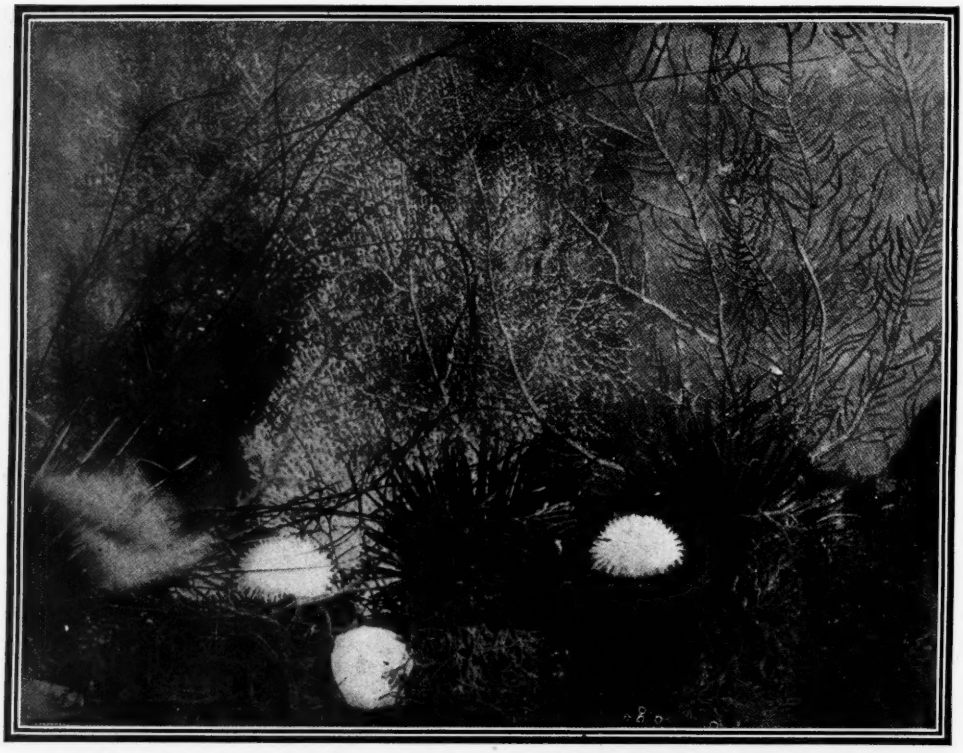
Mr. Frolich's creative powers are well expressed in his fine fountain, "The Spirit of the Pacific," the first work of art seen upon entering the grounds; in the statue of Alaska personifying "Mining," and in the South Sea Island statue to "Hunting."

THE WONDERS OF SUBMARINE LIFE AS SEEN THROUGH THE GLASS-BOTTOM BOAT.

FROM time to time demonstrations are given of the fact that the marvels which emanated from the fertile imagination of the late Jules Verne were but anticipations of the development of human knowledge and progress. The conquest of the air has for some time been an accomplished fact; and now it is known to scientists that the descriptions in "A Thousand Leagues Under the Sea" of the wonders of submarine life in no wise exaggerate the realities of nature. It is, however, one thing to know that scenes of marvelous beauty exist on the sea-floor and quite another to be able to see them with the eye as well as with the imagination. In the *National Geographic Magazine* for September Dr. Charles Frederick Holder describes a means whereby it is possible not only to see but also to photograph submarine life. It appears that about twenty years ago, when Dr. Holder first visited the channel islands of southern California, he was "impressed with the beauty of the kelp-beds and the marine fauna, and had a glass-bottom box made and also planned a glass-bottom boat." He says:

> From this, and doubtless the suggestions of others as well, has grown an extraordinary avocation, that of the glass-bottom boat. The capital invested in all probability is nearly $100,000, and the income is a good and increasing one, due to the fact that the attractive island of Santa Catalina is the Mecca for thousands of tourists annually, most of whom go out in the glass-bottom boats.
>
> When you land in the beautiful Bay of Avalon, about thirty miles from San Pedro, the port of Los Angeles, you are met not by hackmen but by men with glass-bottom boats: "Here you are! Marine Jimmie's boat, only fifty cents." "Take the *Cleopatra!*" or "Right away for the Marine Gardens!" And the steamer is met by these strange craft, that look like the old-fashioned river side-wheelers. These boats . . . range from rowboats with glass bottoms to large side-wheel steamers valued at $3000. There is a fleet of them, big and little, and they skim over the kelp-beds, and have introduced an altogether new variety of entertainment and zoölogical study combined.
>
> The boat is made by having the bottom to the extent of the boards beside the keel, to the width of three feet, from bow to stern replaced by thick plate glass, set inside of a railing so that the glass cannot touch the bottom; even if it did, the observer looks down through a well, his elbows comfortably resting on the padded edge. As the boat moves slowly along, every object on the bottom can be distinctly seen, as the glass magnifies it. The best view, doubtless, is had from the small boats, as they can go well inshore; but both have their advantages.

The island of Santa Catalina is about sixty miles in circumference, and it is lined with a forest of kelp, known to scientists as *Nereocystis*, "a huge vine whose leaves rise and fold and unfold in the water, the abiding place of countless animals of all kinds." Many of these animals are peculiar to this region; and the accompanying illustrations are from photographs taken under Dr. Holder's supervision of objects seen through the glass-bottom boat. The kelp itself "forms a beautiful picture, its rich olive hue when it catches the sun looking not unlike a great band of amber against the vivid turquoise of the water." The effects are in the fullest sense kaleidoscopic; and "as the boat moves over the shallow water exclamations come



BLACK AND WHITE SEA FLOWERS AS SEEN THROUGH THE GLASS-BOTTOM BOAT.

quick and often as one scene melts away and another appears, and the entire range of color is exhausted before the trip is over." Here will be seen a giant California star-fish, and near it the large sea-cucumber, "lying on the rocks prone and motionless." Timid, constantly changing color, and hideous to a degree, may be seen through the glass window the "Mephistopheles of the sea," the octopus, "searching for crabs or anything that it can lay its tentacles upon." Some of the fishes actually seem to have become accustomed to the glass-bottom boat. One of these is thus described:

In the crevices of the rocks you may catch brilliant flashes of livid red. This is the Garibaldi, a fish resembling the angel fish of Florida to some extent. . . . It is very sociable, and comes out, eying the boat and doubtless familiar with the strange double row of faces that are looking down at it.

Among the submarine marvels viewable through the glass-bottom boat is the phosphorescent jelly-fish, with tentacles sometimes fifteen feet long, "a veritable comet, and at night a phosphorescent meteor." Alexander Pope wrote:

Learn of the little nautilus to sail,
Spread the thin oar, and catch the driving gale.

Of this beautiful little animal Dr. Holder writes:

If we are very fortunate we shall see the paper nautilus, the most beautiful of all the mollusks. . . . We may also see the animal leave the shell and move about, flushing a pale red, now a vivid blue. This is the animal that is supposed to raise its sails and float on the seas, "a thing of beauty and a joy forever." It is sad to break up these delightful fables, but the sail merely clings to the shell, and the shell is merely the egg-case or float for the strange creature.

Then there are the strange fishes that mimic leaves, rocks, and weeds so perfectly that it is impossible to distinguish them. They are "black, red, yellow, and white, perfect imitations of the rocks on which they lie, ready to take any kind of a lure."

Apart, however, from the mere entertainment provided by the glass-bottom boat, there is the distinct help which it renders to scientific research. By its aid, after great storms, "the voyager, peering down through the glass window, sees strange and weird

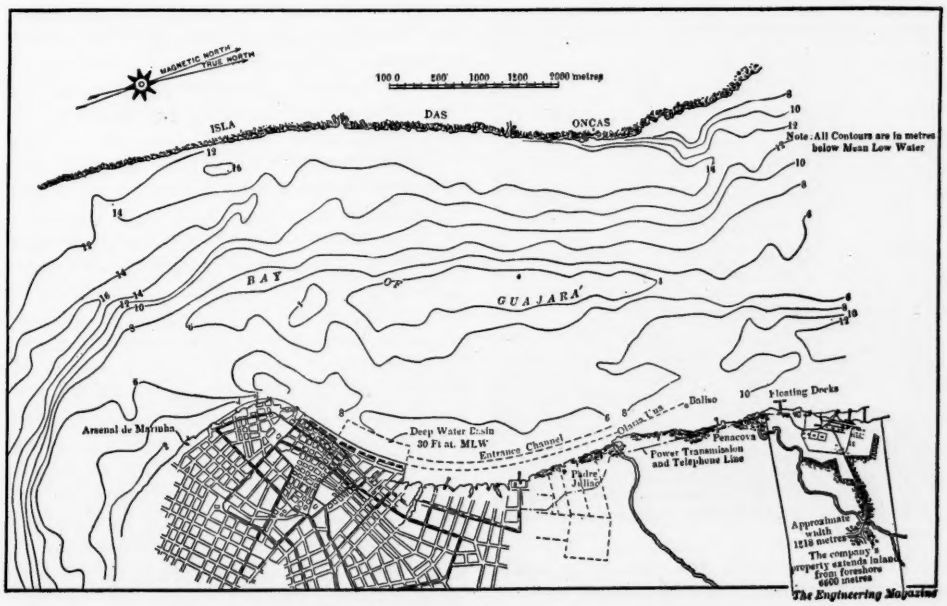
animals new to science or so rare as not to be seen alive by one in fifty thousand."

The big glass-bottom boats hold as many as a hundred passengers and travel up and down the coast. They even "visit the sea-lion rookeries and allow the voyagers to photograph the animals." Surely here is a new and valuable ally to education.

THE PORT OF PARA AND ITS POSSIBILITIES.

THREE thousand miles from New York, three thousand miles from Buenos Aires, three thousand miles from Lisbon, nearly three thousand miles from Iquitos, near the head of steamboat navigation on the upper Amazon, and four thousand miles from London sits Para at the only navigable mouth of the Amazon, without a possible rival on a coast of nearly a thousand miles. In the issue of the REVIEW for July last it was stated that the development of this city and port was a pet scheme of the late President Penna. Particulars of the great construction works now in progress at Para, together with observations on the almost limitless commercial possibilities of the port, form the subject of a paper by Mr. David F. St. Clair in the *Engineering Magazine* for October. He says northern Brazil "has three unique possessions,—a practical monopoly of the crude rubber of commerce, the world's greatest river valley, and the city of Para." He includes Para because it commands the other two; for Para "fixes the price of nearly $100,000,000 worth of crude rubber, nearly half of which is consumed in the United States." He regards Para as "one of the unique geographical and commercial centers on the globe," and believes that it will become "more to the Southern Continent than New Orleans can ever be to the United States." The only thing that Nature seems not to have given to Para is a modern deep seaport.

The city is located on the Para River, an estuary of the Amazon, and is sixty-five miles from the open sea; but the deep water comes up to within three or four miles of the city. Above the city and between the main stream of the Amazon the river is deep enough for the navigation of large ocean-going steamers. The main mouth of the Amazon is not navigable on account of shifting sand-bars and a tremendous bore; therefore the port of Para is the sole feasible port of the Amazon mouth. But at mean low tide the present depth of the water at the quay walls in front of the city is only 19.7 feet. Because of this fact the growing shipping



MAP OF THE HARBOR OF PARA, BRAZIL.

A PARA RIVER STEAMER IN DRY DOCK.

of Para has had to be carried on by an expensive system of lighterage, or else freight has had to be transferred from river steamers to ocean steamers under the difficulties of wind and tide.

Owing to the great variety of its uses, rubber has become one of the "necessaries" of commerce, and it is to this fact that Para owes its great developments. It will be remembered that about six years ago a war was impending between Brazil and Bolivia over the boundary of Acre. To quote Mr. St. Clair:

> Rubber was at the bottom of it, and this scare flashed a limelight upon Para and the Amazon valley. It awoke not only Brazil and Bolivia. . . . It did more. It aroused the public spirit of the city of Para and caused its great rubber exporters to move with the power of an avalanche for a modern port. Many years previous a municipal commission had made a survey of the port and charted it, with its river currents and tides. With this survey as a basis the federal government approached an American corporation building tramways and railroads in Brazil. This corporation is headed by Perceval Farquhar, a native of York, Pa., who is reported to have invested $150,000,000 in the industrial and commercial development of the republic. . . . The chief engineer is M. L. Quellenec, who was consulting engineer of the Suez Canal.

The contract calls for two quay walls: one 3280 feet long, and with a depth of water in front of 30½ feet; the other, 1640 feet long, with a depth of 10 feet in front,—the former for deep-sea ships and the latter for Amazon River boats; also a length of 3875 feet of shallow wall, partly for small boats and partly to improve the city front. The process of construction is as follows:

> A trench is dredged (by bucket dredger) in the hard clay to receive the riprap stone for the foundation,—about a meter in thickness. Divers level off this stone. Railroad rails are then laid on each side of the trench on the riprap at the proposed elevation of the upper surface of the stone. Other rails are moved along these rails lengthwise of the wall, and the stone is brought to the under side of the rails or moving templates across the entire width of the base of the wall. Blocks are then brought forward by the Goliath and by the help of the divers are placed in proper position on the riprap foundation. A "topping crane" follows and brings the wall up to the coping level. The space between the quay wall and the shore will be filled in with sand. . . . Spacious fireproof warehouses are to occupy the entire length of the port.

The Port of Para Company will take over the port and operate it (under an arrangement with the government) when 100 meters of the sea-wall have been finished, which will be about the time this number of the REVIEW appears. It is confidently expected that when all the works are finished the port will, in point of facilities, equal any other port in the world. The same company is constructing the Madeira-Mamorè Railway, 260 miles long.

Under the treaty concluded between Bolivia and Brazil, Acre, with its rich rubber forests, was ceded to the latter for $2,000,000; and Brazil agreed to afford Bolivia every commercial facility of the Amazon and the port of Para.

Concerning the future of the port Mr. St. Clair has no doubt. He writes:

> Bolivia, east of the Andes, is one of the richest regions of the world in timber, rubber, and minerals, and it has some fine agricultural lands. It has no outlet on the Pacific Coast. Its only outlet is through the Amazon and Para. East of Bolivia is the great Brazilian state of Malto Grosso, a territory nearly three times the size of Texas. . . . It is said that a great deal of this territory will grow as fine, long-staple cotton as Mississippi or Alabama. The Brazilian Government has matured a plan to connect by canal one of the tributaries of the Amazon with one of the tributaries of the La Plata in this state, thus opening an all-inland water route from Para to Buenos Aires, a distance of nearly 5000 miles. . . . Peru has little Pacific Coast trade now and the development of this country must pour its wealth into Para. But if Brazil and Para had none of these Andean republics to draw trade from the development of the Brazilian Amazon Valley alone

must in time amount to untold wealth. In the states of Para and the Amazonas and the federal territory of Acre there are near the water's edge ten million rubber-bearing trees. These trees, if properly tapped, will live indefinitely and steadily increase their yield.

At the present time seven lines of ocean steamers, six to Europe and one to New York, enter the port of Para. Then, the Amazon itself is truly an inland sea, being 40 miles wide at many points; and for nearly 2000 miles of its course it has a depth of 60 to 200 feet.

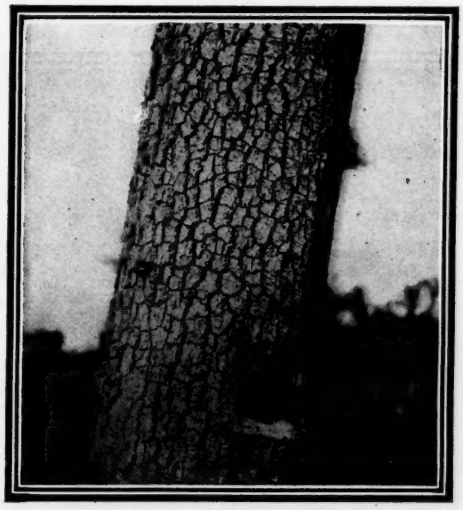
The Para merchants have awakened to the fact that "if the city is to enjoy the full fruits of a monopoly of rubber the city must vulcanize and manufacture goods of the great bulk of the raw rubber that it now exports." Accordingly, a bill has been introduced into the Brazilian Congress to exempt rubber factories from taxation.

QUEBRACHO FOR TANNING EXTRACT AND RAILWAY SLEEPERS.

READERS of the REVIEW will recollect that in "The Story of Leather and Its Uses," which was printed in our issue for October, it was stated that the most remarkable of the new tanning agents was the extract of quebracho, "which makes the best leather in the world." Like mahogany, quebracho is one of the hard woods of the Americas; indeed, the very name itself is a contraction of a colloquial Spanish and Portuguese term, *quiebra-hacha,* signifying "axe breaker." The wood excels in strength even the northern oak, and it really hardens with age. Logs of quebracho felled and left to lie in the forest have been found twenty-five years afterward absolutely sound. When railway-building away from the coast was begun in Argentina the natives found quebracho wood by far the most serviceable material for sleepers; and its reputation has grown so rapidly that to-day miles of Argentine sleepers may be found on European railroads. Thus, curiously enough, while quebracho extract is used for tanning so pliable a substance as morocco leather the wood itself is employed, on account of its toughness, for purposes demanding the greatest rigidity.

According to the *Bulletin* of the International Union of American Republics, although in various countries several trees are known locally as quebracho, the genuine tree is to be found only in Brazil, Paraguay, and the Argentine Republic. There are three varieties. One of them has no significance botanically or commercially; the other two are important and are known locally and in the trade as *Quebracho colorado* (red) and *Quebracho blanco* (white), respectively. The better quality of tanning extract and railroad sleepers are both obtained from the red variety. The white is not so straight, and it furnishes less extract; but the logs are used for fence-posts and axles, and from it is obtained a drug which is used in bronchial diseases. The habitat of the quebracho is the Chaco, "the mysterious no man's land of the early explorers," many of whom lost their lives there, while others returned with wonderful tales of adventure. We read in the *Bulletin*:

To-day there are two Chacos, one belonging to Paraguay, the other to the Argentine Republic. . . . "El Chaco" remained romantic and unproductive until the railroad came. . . . The railways helped to industrialize this region, pushing their way close to the edge and occasionally into the Chaco; steamers and sailing vessels crept farther into the interior on the larger rivers, bringing manufactured goods



THE BARK OF THE QUEBRACHO TREE.

(The workman always tries the tree, if it is to be used for its tanning extract, by testing the thickness of the bark and sap wood.)

from abroad in order to exchange them for cargoes of quebracho, until the mystery of the Chaco has faded away before the march of civilization, while logging camps and sawmills are as busy there as they are in Wisconsin or Canada.

The quebracho, like the mahogany, usually stands by itself or is found in groups of not more than four or five to the acre. It is two or three feet in diameter and "is crowned by a rather thin, oval, or V-shaped mass of branches and leaves." At ten years from planting the trees are big enough for posts; and the Argentine Republic has enacted laws for planting and for conserving the supply of the quebracho for future generations. The making of railroad sleepers has become an industry of huge proportions.

Some of the mills many miles distant from any main railway are equipped and organized in a manner which would reflect credit on any similar plant in the United States. . . . This mill business is carried on by many companies, although the tendency is to concentrate the management into fewer but larger organizations. One company owns a tract of land of about 4,000,000 acres and is prepared to cut timber, fashion it into logs and sleepers, prepare tanning extract, and utilize every other resource which the land provides. Another company can turn out 20,000 to 30,000 sleepers a week.

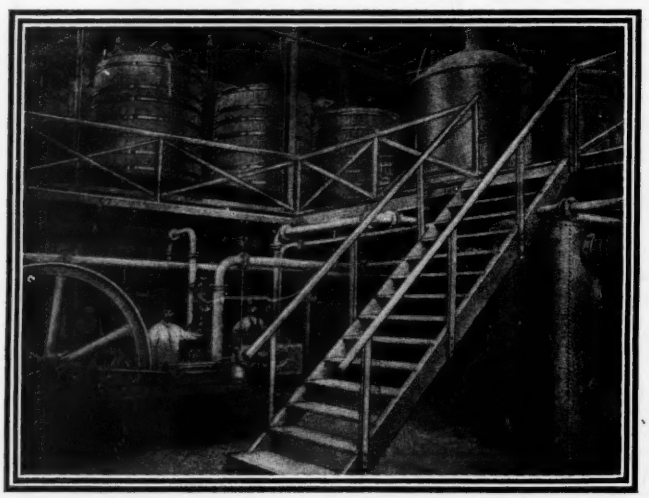
The rough, untrimmed logs from which only the bark has been removed are known as "rollizos" and are used for posts, beams, cabin pillars, or cart axles.

By far the most important product of the quebracho is the extract, which, as has been stated above, is used in tanning leather. From the *Bulletin* we gather the following interesting particulars concerning this industry:

All the timber companies are adjusting their plants so as to utilize the wood, either in its entire output or in that portion not reserved for posts and sleepers, for this extract. In Paraguay and areas in the Chaco remote from good roads every particle of the wood is turned into extract, because the demand is usually in advance of the supply, and it is, therefore, more profitable to manufacture the more concentrated article, which can be more easily and economically carried to market.

One feature of quebracho, in which it is superior to other sources of supply, is that the bark, the sapwood, and the whole of the central part of the tree produce the extract in considerable quantities. . . . Quebracho extract is easily manufactured when the machinery is once installed. All the wood is passed through a machine that cuts it into shavings or the smallest possible chips. It is then collected into immense kettles, in which it is treated by chemical processes until all the tannin is removed; after this the fluid preparation is reduced by evaporation to a thick, jelly-like mass, which is poured into sacks, where it is finally dried into substance sold in commerce.

The preparation of the extract is far less difficult than the gathering of the raw material. In Paraguay the trees are cut in the heart of the virgin forests and have to be hauled by ox-teams to the nearest clearing. As the cutting-stations are generally remote from any settlement, it has been found necessary to employ native Indians for the work, "as they are thoroughly acclimated, understand the wilderness, and can withstand the plague of insects which make life at night miserable for the foreigner." Each factory runs a narrow-gauge railway from the factory to the points on which the newly felled trees are carted. The exportation of quebracho extract from the River Plate has increased from 400 tons in 1895 to about 30,000 tons in 1908. The United States takes about 65 per cent. of this total. In fact, quebracho is becoming one of the chief tanning extracts in use.



THE INTERIOR OF A QUEBRACHO EXTRACT FACTORY.

(Modern machinery of the best quality is used in these factories, even when they are located miles away from the centers of civilization.)

CLYDE FITCH: A SELF-DEFEATED PLAYWRIGHT.

(WILLIAM) CLYDE FITCH, whose untimely death occurred so unexpectedly at Châlons-sur-Marne on September 4 last, was born in the city of New York, May 2, 1865. "In all apparent ways," writes Mr. Clayton Hamilton in the October *Bookman,* "his career was a success; he made more money and achieved a wider reputation than any other American playwright, past or present; his work was popular and well rewarded with critical esteem not only in his own country but in England, Germany and Italy as well; and yet, looked at largely, this same career appears to be a failure, because Fitch has left behind him no single drama that seems destined to endure. Criticism of his work is therefore confronted with a paradox. Why should a playwright who achieved so much have failed to achieve more? Why, in the face of such success, should we feel finally a sense of failure?"

Mr. Hamilton thinks the answer to the riddle is to be found in the fact that "Fitch was himself a paradox." The qualities of mind that enabled him to go so far were "the very qualities that prevented him from going farther." It was "not what he lacked, but what he had that defeated him." His very aptitudes held him back. In illustration of this self-defeating talent of Fitch's Mr. Hamilton reviews several of the characteristics of his work:

First of all, whatever opinion may be held concerning his importance as an author, there can be no denying that Fitch was a great stage-director. . . . Not till after the introduction of electric lighting and the evolution of the picture-frame proscenium did dramatists concern themselves with the preparation and arrangement of pictures on the stage which should convey at once to the audience, by visual means alone, the very sense of life. Fitch made his advent as a producer just at the moment when the theater, for the first time in its history, was fully equipped upon the mechanical side for holding the mirror up to nature; and of this condition he immediately took advantage. He had a genius for arranging mechanical effects; and many of the devices of stage-direction to which we have now grown thoroughly accustomed through their use in later plays are the result of his inventions. Usually his most clever innovations in stage-management were disclosed at the very outset of his plays. By this means he stimulated interest at once, and also avoided distracting the attention of the audience from the progress of the action after the plot was fairly started. Everybody remembers the funeral at the opening of "The Climbers," the automobile in "The Way of the World," the department store in "Glad of It," and the ocean liner in "The Stubbornness of Geraldine." In thus making the theater visually representative of familiar facts of life Fitch performed a very great service.

Considered from the other point of view this very aptitude was "one of the qualities which contributed most toward Fitch's final failure to attain greatness as a dramatist." While taking great pains to render the external facts of life he cared too little about revealing its internal truths. Further:

He often allowed himself to be lured aside from the straight current of a dramatic story in order to accomplish minor effects by the way. The episode of the Cook's tourists in the Vatican, which forms the second act of "The Girl With the Green Eyes," is exceedingly amusing in itself; but it ought never to have been set between the solid first act and the tense and earnest third act of that serious, important play.

Fitch had a "very subtle sense of actors" and "a genius for casting his plays." He gave an excellent training to hundreds of actors and actresses who were quite unknown before "he discovered their special gifts and taught them to behave on the stage as people behave in ordinary life." To this is due the fact that "the American stage is now a far finer instrument of art than it ever could have grown to be, in the same period of time, without his influence."

But, on the other hand, he suffered the penalty of this ability. He was so skillful in devising parts which would exactly fit the capabilities of this or that popular performer that he was often led to make his plays mere vehicles instead of dramas. Of this defect "Her Great Match" and "The Straight Road" may be taken as examples.

Fitch was "an extraordinarily quick and accurate observer of the details of daily life. No little thing escaped his eye." His range, too, was "very broad." But, "like nearly all artists who cover a wide surface, Fitch was lacking in depth.

Mr. Hamilton is of opinion that one reason why Fitch's work was so popular was that "it was inspired by an unusually keen sense of entertainment."

He looked at life naturally in the comic spirit. He was always ready with a laugh. Even when he was most serious and thoughtful, and strove hardest to expose the shams and follies of society, he pleased his audience by maintaining the satiric mood. He was playfully earnest and

smilingly sincere. But for this talisman toward popularity he was forced again to pay a penalty. His sentiment and charm seldom deepened into pathos, and he was utterly incapable of looking at life in the tragic mood. He could see tragic matters only in the comic spirit.

Fitch's activity was phenomenal. In the nineteen years between the first performance of "Beau Brummel" and the playwright's death he "actually produced in the theater between forty and fifty plays"; and more than once he made four new productions in a single season. "There can be no doubt," says Mr. Hamilton, "that this excessive activity was the main reason for his failure to achieve a masterpiece." Fitch did not write rapidly to make more money, nor to widen his fame. He loved writing; and he "strove to do his work as well as he could possibly do it." He simply had to write and write. As late as May 5, 1909, he said of himself: "I can't make my mind keep still."

It appears that last spring Fitch completed a play called "The City," which he told his friends was the best he had ever written. It is hoped that this "is the great work for which we have been waiting." There would be "a dramatic fitness," Mr. Hamilton thinks, if the playwright's last work should "win for him the coveted crown." By his earnest striving he deserved to succeed.

IS THE THEATRICAL MANAGER KILLING THE DRAMA?

A PSEUDONYMIC writer contributes a paper to the *Annales* (Paris) in which he declares that the poverty of the modern drama is due more to the maleficence of the manager than to any other cause. According to this critic, the manager is the Shylock of the dramatic and theatrical world, and every evil that curses "the profession" needs not to be looked for in any other source than the manager's sanctum. Yet our writer admits that the modern manager is the result of the evolution of the theater, which has evolved just as journalism and commerce have evolved, and is as much the victim of the conditions that surround him as are the actor and the playwright. As these conditions prevail, says this writer, there is little hope that the drama of the future will attain to the best level held in the past, it being notorious that during the past twenty years mediocrity has been its characteristic note wherever drama has been acted. He proceeds, speaking from his knowledge of European theatrical conditions:

Your modern manager cares little for the really and truly artistic in modern representations. He is all the time out for profit. In order to assure the maximum of box-office returns he conspires with the outside speculator, makes treaties with well-recommended authors whose ability is often the least quality that wins managerial notice, and follows the nod of fashion which looks for a certain kind of plays to whet peculiar appetites before the after-play supper. If a play, coming from an unknown author, should happen to appeal to the managerial discrimination,—if, first, by the remotest chance in the world, it should happen to be read, —Mr. Manager will insist, before producing it, on being handed a small present by the sanguine aspirant, and it generally happens that the number of representations of such a piece coincides with the amount of money paid over in the ratio of one-half,—that is to say, that the author of a *succès d'estime* is always out of pocket by at least half of the amount he presented to the manager.

The writer in the *Annales* declares that the passing of the old stock company means a bad time for the intellectual drama of the future. He says:

In the old stock companies the representation of any given play assured the author a reasonable return for his labor. There were no long runs, but there was a good all-round average. If there were no two-year runs, there were few failures. Also actors were content to remain with the same company. They did not, as they do now, put themselves up at auction. The result was consistency, harmony, and satisfaction to all concerned. One cannot fail to note one phenomenon resulting from this overwhelming selfishness of the manager, whose greed exceeds that of any known animal: people are rapidly losing all interest in really intellectual dramas and are cultivating a taste for the vaudeville and the music-hall. The only hopeful sign in the modern management of the theater is that the competition among dramatic authors is so keen that a higher quality of humor and comedy is slowly becoming apparent. There would also seem to be a strong reaction on the part of educated people against the poor stuff thrown at them across the boards, so that the uneducated may be dazzled by sensation and elaborate staging, all of which signifies nothing in point of instructiveness. And as the thinking portion of human society makes the theater a profitable possibility, it seems likely that the manager may mend his methods when his best clients begin to fall off.

IS MEXICO A LAND OF DESPOTISM AND SLAVERY?

AN article from which we quoted in the October REVIEW depicted the Republic of Mexico as a monument of the successful administration of President Diaz and indicated the evidences of progress and prosperity which are to be met with throughout the country. And in the June number of the REVIEW Mr. Charles F. Speare, in his paper on the finances of Mexico, said: "When one considers the proportion of peons or Indians to the entire population one wonders how Mexico can develop as she does. . . . From chronic and hopeles indebtedess . . . her credit to-day is the best of any of the southern republics. . . . Her annual surplus has the respect of the money markets. When she wants to borrow she does so on good terms." An impartial critic would admit that there must be some substantial ground for statements such as these, but if a writer in the *American Magazine* is to be credited the conclusion is an erroneous one. In the current number of that periodical appears the first of a series of articles by Mr. John Kenneth Turner on "Barbarous Mexico." An editorial introduction informs us that the "Republic" of Mexico is "a pretense and a sham"; that its government is "more absolute and autocratic than Russia"; that "it has its Siberias,—in the hot lands of the south; its spy system, its condemnations for political offenses, and its terrible prisons"; that it is "inhabited by fifteen millions of unhappy people" for the uplifting of whom "nothing has been done." Mr. Turner's first article is upon "The Slaves of Yucatan." He says that most Americans term Mexico as "our sister republic" and picture her vaguely as "a free people in the sense that we are free." Others regard it as a country where "a great and good man orders all things well for his foolish but adoring people." This is what Mr. Turner says he really found:

> The real Mexico I found to be a country with a written constitution and written laws as fair and democratic as our own, but with neither constitution nor laws in operation. Mexico is a country without political freedom, without freedom of speech, without a free press, without a free ballot, without a jury system, without political parties, without any of our cherished guarantees of life, liberty, and the pursuit of happiness. It is a land . . . where the executive rules all things by means of a standing army, where political offices are sold for a fixed price, where the public school system in vast country districts is abolished because a governor needs the money. I found Mexico to be a land where the people are poor, because they have no rights, where peonage is the rule for the great mass, and where actual chattel slavery obtains for hundreds of thousands. Finally, I found that the people do not idolize their president, that the tide of opposition, dammed and held back as it has been by army and secret police, is rising to a height where it must shortly overflow the dam. Mexicans of all classes and affiliations agree that their country is hurrying toward a general revolution in favor of democracy,—if not a revolution in the time of Diaz, for Diaz is old and is expected soon to pass, then a revolution after Diaz.

Mr. Turner obtained his first hints as to slavery in Mexico from four Mexican revolutionists at Los Angeles in 1908, who told him that in Mexico men, women, and children "were bought and sold just like mules"; and that "just like mules they belonged to their masters." And Mr. Turner claims he first found American slavery in Yucatan, "the peninsula which is an elbow of Central America." The soil of Yucatan is specially adapted to the production of henequen or sisal hemp. The gigantic green plants extend for miles.

> The farms are so large that each has a little city of its own, inhabited by from 500 to 2500 people, according to the size of the farm. The owners of these great farms are the chief slaveholders of Yucatan; the inhabitants of the little cities are the slaves. The annual export of henequen from Yucatan is said to be about 250,000,000 pounds. The population of Yucatan is 300,000. The slave-holders' club numbers 250 members, but the vast majority of the lands and the slaves are concentrated in the hands of fifty henequen kings. The slaves number probably more than 100,000.

The planters do not call their chattels "slaves." "They call them 'people' or 'laborers,'" and ostensibly they are working off indebtedness to their masters. As the president of the Yucatan Chamber of Agriculture put it:

> We do not consider that we own our laborers; we consider that they are in debt to us. And we do not consider that we buy and sell them; we consider that we transfer the debt, and the man goes with the debt.

Mr. Turner says that he entered Yucatan in the rôle of an American investor seeking a plantation, and that he was asked 400 Mexican dollars apiece for men by the planters with whom he treated. A year previous the price had been $1000 each man. When a

slave is sold the transfer is a very simple matter:

"You get the photograph and identification papers with the man," said one, "and that's all." "You get the identification papers and the account of the debt," said another. "We don't keep much account of the debt," said a third, "because it does not matter after you've got possession of the man." "The man and the identification papers are enough," said another; "if your man runs away, the papers are all the authorities require for you to get him back again." "Whatever the debt, it takes the market price to get him free again," a fifth told me.

The recruiting of the supply of slaves is not at all difficult.

"It is very easy," one planter told me. "All that is necessary is that you get some free laborer in debt to you and then you have him. Yes, we are always getting new laborers in that way."

The amount of the debt does not matter, so long as it is a debt.

The slaves of Yucatan, Mr. Turner says, "get no money. They are half starved. They are worked almost to death. They are beaten. A large percentage of them are locked up every night in a house resembling a jail,"—to prevent their running off.

Much of Mr. Turner's statements as to beatings is founded on hearsay; but he claims to have witnessed some punishments:

One of the first sights that we saw on a henequen plantation was the beating of a slave,—a formal beating before the assembled toilers of the ranch early in the morning just after the daily roll-call. The slave was taken on the back of a huge Chinaman and given fifteen lashes across the bare back with a heavy wet rope, lashes so lustily delivered that the blood ran down the victim's body. This method of beating is an ancient one in Yucatan and is the customary one on all the plantations for boys and all except the heaviest men. Women are required to kneel to be beaten, as sometimes are men of great weight. Men and women are beaten in the fields as well as at the morning roll-call. Each foreman, or *capataz,* carries a heavy cane with which he punches and prods and whacks the slaves at will. I do not remember visiting a single field in which I did not see some of this punching and prodding and whacking going on.

The slaves rise from their beds at 3.45 in the morning; their work in the fields "ends when it is too dark to see any more." When any are sick they are allowed to work as "half timers."

The Mexican Liberals say: "Siberia is hell frozen over; Yucatan is hell aflame."

THE GERM OF LAZINESS: THE "HOOKWORM" DISEASE.

IN December, 1902, and for some time thereafter, the American press made much of what it conceived to be an exceptionally good joke. At the Pan-American Sanitary Congress held in that month it had been announced by no less an authority than the Chief of the Division of Zoölogy of the United States Public Health and Marine Hospital Service, Dr. Charles Wardell Stiles, that he had discovered a human parasite to which were directly due the "laziness" and "shiftlessness" of the poor whites of the sand-lands and pine-barrens of the South. The "lazy bug," the "lazy germ" became a joke at which people laughed whenever the subject was broached, until Dr. Stiles, who "had seen emaciated men trying to wrest a living from half-tilled fields, and women, to whom rest never came, trying to nurse starveling babes at withered breasts, solemnly asserted in an address: 'It isn't a thing to laugh at when men and women and children are dying.'" The story of Dr. Stiles' momentous discovery is forcefully told by Marion Hamilton Carter in *McClure's* for October; and it shows that, far from being a laughing matter, Dr. Stiles' announcement was founded on facts, and those of the gravest import to at least two million people of the South. The discovery of the hookworm itself is not recent.

In 1782 Goeze, a German clergyman and zoölogist, found a small hair-like parasite in the intestine of a badger he was dissecting, which he called *der Harrundwurm* (the hair-round worm). . . . Seven years later Froelich, another German zoölogist, found a similar parasite in the intestine of a fox. Observing the "hooks" spoken of by Goeze, Froelich adopted the vernacular word *Haakenwurm* (hookworm) and gave the generic name *Uncinaria* (from *Uncinus,* a hook) to the genus he established. Thus the parasite got its name. As a matter of fact the "hooks" are not hooks at all. . . . However, the name clung for two other reasons: The head of the worm bends conspicuously backward, making a hook of the worm itself; and within the mouth cavity of the European species lie four sharp, chitinous

hooks by which the parasite fastens itself to the intestine. . . . In 1843 Dubini, an Italian of Milan, described a species occurring in man, to which was attributed the widespread anemia among Italian brickmakers, excavators, and the poorer rural population. . . . In 1879 a terrible epidemic of "tunnel disease" broke out among the workers in the St. Gothard tunnel and the interest of the whole scientific world was aroused. Investigation left no doubt as to the cause of the disease, and that it had been spread through total neglect of personal hygiene on the part of the workers and lack of sanitary conveniences. The soil of the tunnel was completely impregnated with the ova and larvæ of the hookworm, and all who handled it became infected. In 1881 Bozzolo, in Turin, suggested the use of thymol, the active principle of thyme, for the destruction of the parasite, which remains the stock treatment to-day.

The disease became prevalent in Europe, and reports of it also came rapidly in from such widely scattered places as Calcutta, Tunis, Cape Colony, and Egypt. The worm had not, however, been found in America; but in 1893 Blickhahn "won the priority claim for first discovery by publishing in the *Philadelphia News* the report of an imported case of a German bricklayer he had treated." On the heels of this a few cases were reported from Richmond and New Orleans, and the profession knew that the hookworm was here. But no one knew that America had a hookworm of her own until 1901, when "the right case fell into the hands of the right man,—Dr. Allen J. Smith, of Texas,—and the account of it was published by Dr. Charlotte M. Schaeffer in the *Texas Medical News.*" Dr. Smith found that his hookworm was "not Dubini's, but a new American species never before described." Dr. Stiles had asked for specimens of the worms from Dr. Smith's case and, when he received them, "went off on a vacation to work out the question of species." Later, while Dr. Smith was writing a paper on his hookworm, "the mail one day brought him a little two-page pamphlet, dated May, 1902, signed 'Stiles,' announcing the new American hookworm. Dr. Stiles had won the priority claim for the discovery. It was one of the closest runs for priority on big game in the history of zoölogy."

In describing how the hookworm feeds upon its victim, the *McClure's* writer says:

The hookworm's motto might well be *Multum in parvo;* for, compacted within its tiny body, less than an inch long and looking like a bit of soiled coarse thread, are mouth, esophagus, intestinal canal, etc., to which the female adds the capacity for many thousand eggs. . . . When the hookworm is ready to eat it presses its mouth disk against the intestine, draws a tiny piece of the mucous membrane into its mouth, and punctures it with its lancets and fang. Through the minute holes thus made the blood is sucked out.

How long a hookworm remains clinging to one spot before it moves to a fresh one is not known. . . . Dr. Sandwith, an English physician, found in one of his autopsies 250 worms and 575 bites. In another, when the autopsy was performed seven hours after death, there were 863 worms, of which 217 were still clinging, and some of them had not only their heads but half their bodies buried in the intestine.

Any one who has lived in the South knows the "sandhillers," "barrenites," and "crackers," a miserable class of people springing from Anglo-Saxon stock but having a deep-seated aversion to work. Some are bloated with dropsy, have lusterless eyes, and a skin like tallow. Some are "dirt-eaters,"—they eat dirt and clay right off the ground; or they will pick lumps of soot out of the chimney and suck it till they swallow it. All of these are the unfortunate victims of the *Necator Americanus,* the "American murderer," as Dr. Stiles now calls his hookworm. The affections known as "ground itch," "foot itch," "dew poison," etc., have also been traced to the same source. For it is found that in most cases infection takes place through the skin of the foot. Herein lies the one hopeful feature of hookworm disease: the parasite cannot multiply in the body of its victim.

The female lays her thousands of eggs in the intestinal tract of her victim, but they cannot develop without oxygen. When they have passed out, and conditions of air and temperature are favorable, it takes them from one to three days to hatch into minute larvæ, barely visible to the naked eye. . . . After a short period of growth a new skin is formed under the old one and each larva molts. It becomes longer and thinner, and presently the second molt begins. . . . It is now in the infective stage, and unless it can fasten on a passing foot, or a stroke of luck sends it down its future victim's throat in drinking water or on the surface of unwashed vegetables, its career as a parasite is nipped in the bud.

At this stage freezing and complete drying are fatal, so the parasite hastens to protect itself.

It wastes no time, but crawls off to the nearest puddle or into damp soil, where it can protect its feeble body from the drying action of sun and wind. In this way,—burrowing through loose, sandy soil, gathering about the roots of plants and vegetables,—the larvæ hatched from a single deposit spread themselves over an area probably a hundred times greater than the spot whence they originated. And there are tens of thousands of them, all bent on the same errand, all ravenous for contact with human flesh.

It will have been gathered from what has been said that the spread of the hookworm disease is due to soil pollution. In a census of 366 sand-land farms, taken by Dr. Stiles, 43 per cent. of the whites and 79 per cent. of the negroes were without any kind of sanitary convenience. It is found that, "without so much as guessing that there is anything the matter with him, the negro is able to carry about with him a number of hookworms that would lay a white man in his bed and a white child in his grave." And it has been fairly assumed that "in the beginning the negroes brought the hookworm with them from Africa on the slave-ships, and it has remained with them ever since." This is the "price of slavery" that has fallen on the white man and his children; for wherever the whites have followed the negro on plantations that he tilled in slave days anemia with symptoms of the hookworm disease has broken out among them, and it now numbers two million cases in the South. By it thousands of American families have been reduced to abject poverty and millions of dollars have been lost through incompetent labor in every State below the Potomac.

It is the ignorance and carelessness of the white landlord that are responsible for the present insanitary conditions; and five great States in the South are now confronted with the grim fact that "their labor problem is the problem of soil pollution and the hookworm disease."

THE TARIFF MAKE-BELIEVE.

PRESIDENT WOODROW WILSON, of Princeton, contributes to the October *North American Review* a trenchant criticism of the results of Messrs. Payne and Aldrich's attempts at tariff-making. He begins by saying that "the wrong settlement of a great public question is no settlement at all." Therefore, the new tariff law, which is "miscellaneously wrong in detail and radically wrong in principle, which disturbs more than it settles, and by its very failure to settle forces the tariff question into a new and much more acute stage, but which its authors would fain regard as a settlement of the tariff question," is no settlement at all. Men of their mind and with their attitude toward the interests of the country "never can settle it"; for they "do not know the way and cannot find it." New men and new principles of action "must therefore be found." The country "must now go to the bottom of the matter and obtain what it wants."

In the first place, it is the general opinion throughout the country that this particular revision was chiefly pretense, and that it is the first time that we have had tariff legislation of this kind. The McKinley tariff bill and the Dingley tariff bill, whatever may be thought of their wisdom or of their validity, as acts of statesmanship, were unquestionably frank and genuine. There was no concealment or make-believe about their purpose or their character. . . . Private favors will inevitably creep in. But no one was deceived. The men who put those measures through had no doubt that they had the support of the country in doing so. They gave the country what they thought opinion would sustain, gave it what they honestly supposed that it wanted. But no one who is capable of assessing opinion now can possibly claim that that is what the men who were behind the Payne-Aldrich legislation did. They knew they were not giving the country what it wanted.

The methods by which tariff bills are constructed need revision. Nowadays debate in the Houses has nothing to do with it. What takes place in the committees is confidential. It is considered "impertinent for reporters to inquire." This policy of silence and secrecy is "absolutely inconsistent with every standard of public duty and political integrity." If the newspapers published even the debates, and the public read them, the entire country would presently realize how flagrant the whole make-believe is. President Wilson calls attention to "one extraordinary circumstance of the debates in the Senate":

The Republican party platform had promised that the tariff rates should be revised and that the standard of revision should be the differences between the cost of producing the various articles affected in this country and in the countries with which our country competes. One of our chief industrial competitors is now Germany . . . and the Department of State had . . . requested the German Government to furnish it with as full information as possible about the rates of wages paid in the leading industries in that country. . . . The German Government, of course, complied . . . transmitting an interesting report. . . . The Department of State placed it at the disposal of the Finance Committee of the Senate. But Senators tried in vain to ascertain what it contained. Mr. Aldrich spoke of it contemptuously as "anonymous," which, of course, it was not; as "unofficial," and even as an impertinent attempt on

the part of the German Government to influence our tariff legislation. It was only too plain that the contents of the report made the members of the controlling faction of the Finance Committee very uncomfortable indeed. It undoubtedly showed . . . that the wages paid to skilled laborers in Germany are practically as great as those paid in the United States. . . . To have made it public would have been to upset half the arguments for the rates proposed with which the committee had been misinforming the country. . . . It would have proved that the leaders of the party were deliberately breaking its promise to the country. It was therefore thrown into a pigeonhole and disregarded. It was a private document.

Referring to the great power of the Speaker of the House, and asserting that "it is common knowledge what Mr. Cannon and Mr. Aldrich would prefer to have the House do when any question of this sort is under consideration, President Wilson reminds his readers of the fact that "these men represent forces; they do not constitute them. The forces that control the Republican party lie outside of them. They are only the spokesmen of those forces." Why do the rank and file of the Republican members still, in this day of change, find themselves unable to make an independent choice in a matter like this? . . . Why, then, are they impotent?" The answer is:

"The Republican party is old at the business of tariff-making and has established a business constituency. Its leaders feel that they must satisfy that constituency." . . .

After some observations on protection and the rise of the trusts, it is pointed out that the latter "do not need the assistance or the 'protection' of the Government." They have "invaded foreign markets, and sell to all the world where there is no government to assist them." Now "no political party can afford to be their partners in business." President Wilson believes that it can be shown that high protection created the trusts and combinations of our time, though he is willing to admit that they might, and probably would, have arisen in any case. The fact that has been disclosed to us in these latter days is this:

We have witnessed the partial creation . . . on the one hand, of a comparatively small privileged class or body of men, the men who control capital and the uses to which it is put, and who have, as the representatives of the business of the country, the ear of Congressional committees; and we begin to see, under them, associated with them, on the other hand, a vast unprivileged class or body which forces its way to a share in the benefits of our apparently prosperous conditions only by threats and strikes, and is steadily deprived of a large percentage of what it thus gains by rapidly rising prices which day by day increase the cost of living amongst us. What, then, shall we do? Shall we adopt Thorough as our motto and sweep the whole system away? By no means. The system cannot be suddenly destroyed. . . . It must in some conservative way be altered from decade to decade, if possible from year to year, until we shall have put all customs legislation upon a safe and permanent footing.

There is "no real difficulty about finding how and where to lay such taxes, when once a just principle has been agreed upon, if statesmen have the desire to find it. The only trouble," says President Wilson, "is to ascertain the facts in a very complex economic system. Honest inquiry will soon find them out, and honest men will readily enough act upon them, if they be not only honest but also courageous, true lovers of justice and of their country."

AMERICAN SHIPS AND THE WAY TO GET THEM.

IN the *Atlantic Monthly* for July "A British Marine Officer," writing under the heading "Wanted: An American Merchant Marine," narrated the following as an actual experience:

Four months ago, while passing along the Liverpool docks on an electric train, I saw the Stars and Stripes flying at the peak of a sailing ship. This so tickled me that I broke my journey and walked back half a mile to get a closer look at the curiosity. Arriving at the dock I found the ship to be the *Homeward Bound*, of San Francisco. On questioning the dockmaster as to the number of American ships he had berthed he replied: "This is the first American ship I have berthed in my twelve years' experience on the docks."

This writer held that the American merchant marine had "ceased to exist."

In the October number of the same magazine is published a reply to the British officer, by Mr. Winthrop L. Marvin, which, an editorial note says, "represents so ably the views of those who believe in the stimulus of ship subsidies as an essential remedy that it is printed without regard to views upon tariff reform which have been repeatedly expressed in the columns of the *Atlantic*."

Mr. Marvin, while admitting that "it is good sometimes to see ourselves as others see us," and that "the sharp words of the friendly British officer are certain to intensify the determination so manifestly rising in our country to recreate an American merchant marine worthy of the present wealth and strength and the glorious traditions of the Republic," points out that the author of "this really notable article" falls into error in suggesting that a "free-ship" policy,—a wholesale purchase of American ships from British builders,—would have averted the loss of our ocean-carrying. The decline of the ocean trade of the American merchant marine is due, he says, to "a situation which could have been only partially and slightly modified by 'free ships.'"

This loss of our shipping is due to, and yet could have been prevented by, the modern Republican system of protection. When, in 1861 and the years afterward, the statesmen of the new Republican party, not merely to meet the exigencies of the Civil War, but with deliberate, far-seeing purpose, set themselves to force the development, through national aid of great national industries, they left out of the protective system what for three-quarters of a century had been one of the greatest of those industries, undeniably the most successful, and in the manner of its growth the most distinctly and characteristically American.

The fact is generally forgotten that in 1789 our merchant marine was almost as shrunken as it is now, "a mere skeleton of 123,000 tons," and that then, as now, our commerce was carried by British shipping. But our statesmen, in their very first tariff act of that year, "embodied stalwart protection for American ships and sailors through the form of discriminating tonnage and customs taxes, which compelled American merchants to employ the ocean-carriers of their own country,—and the law required that these ocean-carriers should be built in the United States." This measure was eminently successful. By 1800 our merchant fleet had expanded to "a tonnage of 667,000, carrying 89 per cent. of our imports and exports," and ten years later to "981,000 tons, carrying 91 per cent." These policies of ship protection "were not entirely withdrawn against Great Britain, our chief competitor, until 1849; and by that time they were reinforced by a generous system of mail subsidies which gave to our ocean steam fleet a growth in quantity and quality far superior to that of the United Kingdom." Our merchant marine reached its zenith in 1855, with 583,000 tons of shipping launched that year in the United States; and this was the direct result of the protection initiated in 1789.

In 1860 our shipbuilding dropped to 214,000 tons, one cause of the shrinkage being the withdrawal of the ocean-mail subsidies, "in retaliation on the part of the leaders of the South against the abolition ports of the North."

Not all the pluck and resource of Vanderbilt and Collins, the ablest ship-managers of their time, could sustain the American steam lines, unsubsidized, against the treasuries of Europe; and all but a few of the splendid Yankee steamships had vanished with the clipper ships from the great trade route of the North Atlantic when the first shots of the war were fired at Sumter. The Civil War did not begin the destruction of our shipping, as is often but inexactly stated; the destruction had begun before. American ships, without their mail pay, though larger and faster ships, could not compete with the British Cunard line and its subsidy of $900,000 a year.

Mr. Marvin claims that "it is the Solid South, aided by a portion of the Middle West, that is directly responsible for the failure of the American Government to take some step to include the merchant marine within the fortunate circle of protected industries." But the opposition of "nearly all of the Southern Democrats and a faction of Middle Western Republicans" is becoming weaker year after year. The propaganda for the American ship, which has been successfully carried on by the Merchant Marine League of the United States, is combated "in most of the Western States by the resident agents of the European steamship combinations, which derive an income of about $200,000,000 a year from their control of our ocean-carrying." This is a prize which Europe will not relinquish without a mighty battle.

Replying to the question, "Has not the shipbuilder been protected by our exclusive navigation laws?" Mr. Marvin admits that he has been, but that "the prohibitory protection of the shipbuilder is of no avail because the use of the ship itself is not protected."

On the general desirability of subsidies for ships Mr. Marvin cites the experiences of other nations,—Germany, France, Sweden, Austria, Japan, and pre-eminently Great Britain,—each of which is reaping the benefits of such a system. China and the United States are "the only important governments which have held aloof from the modern policy of direct and liberal national aid to the merchant marine."

Mr. Marvin corrects the impression of

the British marine officer that, "with the exception of Cramps', America has hardly a private shipbuilding yard of any consequence." At Boston, Bath (Me.), Sparrows Point near Baltimore, Newport News, Seattle, and San Francisco are yards "fit, of course, to undertake any class of construction." To throw away these mighty shipyards would be "an unconscionable folly." The development of an American merchant marine and of American ocean shipbuilding "must proceed together."

THE FOURTH PARTITION OF POLAND.

THE prospective absorption of two of Russian Poland's important districts by incorporating them with one of the provinces of the Russian Empire proper,—this it is that moves "Spectator" to contribute an article to the Viennese *Oesterreichische Rundschau* under the above title. If "Spectator's" title might by some be called inexact, it is yet terribly significant, for as he sums up the various considerations of the case in one sentence:

> The Poles are in two populous and important districts, losing all their former educational, legal, and economic rights, the Polish language being proscribed and excluded from these departments of their life; in fact, not since 1795 have the Poles been visited by a more disastrous national calamity.

We would here remind our readers that there have been three actual "partitions" of Poland in the years 1772, 1793, and 1795 for the benefit of Prussia, Austria, and Russia,—Austria not being concerned in the second partition, with Russia remaining possessor of the lion's share after the third.

The proposals now before the Duma, defining and regulating the status of the territory to be subtracted from Poland and added to Russia, are quite sure to be accepted by that pliable body, thinks "Spectator," who therein agrees with a large section of the Polish press. The plan is to take the two Polish districts of Lublin and Siedlce and to unite them into one new district under the name of Kholm, which, in turn, is to be placed under the jurisdiction of the governor of the province of Kiev. To Kiev itself at the present time already belong Podolia and Volhynia; when the projected arrangement is enforced that province will include the districts of Kiev, Podolia, Volhynia, and Kholm. And thus the area of Russia proper will be increased by Russian Poland's second and third largest political divisions, which, combined, cover 12,000 square miles (the size of Maryland and Delaware together) and contain over 3,000,000 inhabitants. As to Russia's general attitude, past, present, and future, toward its Polish population, nothing could be more succinctly sinister than this paragraph in the *Oesterreichische Rundschau:*

> Neither the smooth words which the Poles from time to time receive in the Duma from interested persons nor the handsome phrases regarding Slav solidarity which in recent times have slipped so glibly from the tongue at pan-Slavist congresses have in the least altered the fact that the policy of the Russian Government toward Russian Poland is one of permanent repression. The bill relating to the new Russian administrative district of Kholm, which is now to be created, means a climax in a policy aiming at the destruction of Polish nationality.

How fatal this policy to the survivance of anything Polish may easily be seen from some of the proposed regulations for Kholm. In the first place, a number of exceptional rules affecting Poland are to be abolished in Kholm. In the municipal schools the teaching of the Polish and Lithuanian languages will cease, likewise the privilege of private schools to teach certain subjects in Polish or Lithuanian; in the popular schools all instruction must be given in the Russian tongue. Roman Catholic holidays are no longer to be officially observed. Poles will be allowed to purchase or lease real estate only from persons of their own nationality; but Poles who sell their land to orthodox Russians are to be relieved of certain fiscal contributions. Polish and Lithuanian are to be banished from the law courts, and all legal proceedings must be carried on in Russian, all legal documents written in Russian, whether the parties thereto understand Russian or not. In short, the 3,000,000 Polish people of Lublin and Siedlce will to all intents and purposes, as residents of Kholm, become absorbed into and form an integral part of the imperial province of Kiev.

FINANCE AND BUSINESS.

NOTES ON APPLIED ECONOMICS OF THE MONTH.

CHILDREN, SAVINGS, AND HOMES.

MOST of the boys and girls in East Rutherford, N. J., belong to the "juvenile branch" of the local building and loan association. This branch is managed by a committee of women with such success that the amount saved by the children has grown, during the last few years, from $2000 to $20,000.

If you stop off at East Rutherford you find the children there looking as happy as they need to be, not suffering from deprivation of necessities; and, on the other hand, the association has $20,000 to help laboring men, young married folks, and others whose financial resources have not yet caught up with their love of home to own their own houses and lots.

What such building and loan associations have done for home owners is best seen in Philadelphia. Here was founded the first "local" society in the United States. By 1890 60 per cent. of Philadelphia families owned their own dwellings; and practically all the smaller ones had been bought through building and loan societies. Cincinnati and St. Louis are the next strongest examples of such homes and such associations.

The comparatively surprising amount of the New Jersey children's savings has been a matter of comment in other States. New York passed a law making it easy for building and loan associations to help minors to save. Another law followed last winter, allowing public school superintendents or principals to collect money from pupils and to deposit it in such associations. Juvenile branches in Corning and Elmira, N. Y., are prospering, as they are also in several associations in Ohio.

It would seem difficult to find a field of practical philanthropy more blessed than this, both to those who give and to those who receive. If the upbuilding of a community's homes is desirable, how much more so is an education in saving, in "doing without," applied to the scholars early enough in their lives to give reasonable hope that it will result in a habit?

Of course, the associations referred to are the "local" and "mutual" kind,—not anybody's money-making scheme. Readers who would like to apply the principles to their own communities can learn details from the ladies in East Rutherford, or from Mr. A. W. McEwan, secretary of the New York State League of Co-operative Savings and Loan Associations, 20 Vesey Street, New York City.

STOCKS AND THE PLAIN PEOPLE.

NEVER in the history of the country have so many non-financial folks been asking the question: Will the stock market go higher?

For instance, hundreds of readers of this single magazine have written of their holdings of large and small lots of stock, or of bonds from one to ten of a kind, bought a year or two ago. Then this magazine was calling attention to the fact that average earnings entitled standard stocks to higher prices than were being asked.

What a big movement these readers shared in can be figured from the increase of stockholders in representative corporations in the year following 1907. Twenty-five railroads reported 252,083 stockholders on June 1, 1908,—41,014 more than the year previous. Forty manufacturing and other companies reported 322,277 in 1908,—an increase of 25,985.

There were 100,000 new shareholders after the 1907 panic to be added to the former 250,000 of the sixteen leading railroads and other companies alone.

Now many of these people, perhaps the majority, want to handle their money scientifically. They have been noticing the rise in the market for stocks and bonds. They have heard that 65 per cent. was added to the average price of representative railroad stocks during the twenty months ended August 14. Such a rise is unprecedented.

People know it is a good, general, sensible rule, after any prolonged upward swing in common stocks, to exchange them for something more fixed, like a real-estate mortgage, or a steady bond, or a deposit in a good bank. Even if everything goes higher, they reason, still they can look back at the 30 or 40 or 50 per cent. made on their money by the ex-

change as enough of a good thing; and they look forward to an opportunity of doing it again some time. The stock market has always moved by swings. It may be expected to keep on doing so.

That many such exchanges are actually being made appears from the reticence of large corporations to give the number of their 1909 stockholders. The inference is that there are less this year than there were last year.

WHAT THE STOCK MARKET CANNOT DO.

WHEN folks are figuring on the purchase and sale of stocks they don't often enough stop to think what stock prices are,—and, above all, what they are not.

"To-Day's Market," as reported on the newspaper's financial page, might just as well be called "To-Day's Guess." The price of the typical common stock to-day is supposed to be an estimate of the earnings of the corporation in question for the next year. Not present conditions but "futures" make the price of that stock.

Prophecy is peculiarly dangerous in this field. Reports and accounts can be calculated and averaged for years past, and conclusions drawn, but no earthly means has yet been found to calculate the one factor most important to the stock market,—next year's crops.

Last month, for instance, it was announced by the Government that the condition of cotton was only about 58 per cent.,—less than any year since 1902. This plant is the greatest single influence on foreign exchange,—the relation of our credit to the credit of other countries. It is one of the heaviest freight items on certain Southern railroads. For instance, it supplies 10 per cent. of the total tonnage of the St. Louis Southwestern Railroad. Last year, who knew anything about the cotton crop?

Then there is the large "accident." The San Francisco earthquake was one, the Boer War was another, the insurance scandals formed a third. Every so often comes a catastrophe, perhaps beneficial to humanity in the event, but nevertheless entirely upsetting to the stock market plans and ideas of the strongest and wisest.

Last month the known factors averaged very favorable. Any one studying the groups of figures furnished by one of the statistical agencies,—figures of money, of labor, of trade and enterprise,—could easily deduce that manufacturing and mercantile conditions were above normal and getting better, that banking and monetary conditions did not point to any continued tightness of money, and that investment conditions were not as inflated as they have been before. In a country whose history is as much *before it* as America's it can be expected that industry will improve for a couple of years until it breaks previous records and that the stock market will discount this fact and pass its own high point of 1906.

But remember that stock prices are "futures" and that the profoundest calculator of this equation is but a school child before the unknown x and y,—crops and accidents.

THE BIGGEST INVESTMENT OF ALL.

AMONG the eight thousand and more corporations whose affairs are interesting enough to the public to be treated in the "Moody Manual," the investor looks in vain for stocks and bonds that are backed by agriculture,—the greatest industry of all.

American farmers this year are taking in some $8,750,000,000,—some 16 per cent. on their capital. For example, the *Argus-Leader,* that lively newspaper out in Sioux Falls, points with pride to the $200,000,000 new wealth produced by South Dakota alone this year. "Analysis of the figures shows that the farmers are getting most of it. A hog to-day brings as good a price as a steer a number of years ago. Corn and wheat and oats and barley are selling at the top price. Hence, the *Argus-Leader* cannot be enlisted in pity for the poor farmer. He does not need it."

Now suppose one wishes to invest with these most prosperous business men and has already one-third or so of his capital in farm mortgages, or something similar, and wishes to enjoy for the other two-thirds the advantages that a responsible corporation gives.

One can purchase stocks and bonds of companies that buy farm products, such as American Beet Sugar, Corn Products, American Woolen, and American Cotton Oil, or others that the farmer buys from, such as the International Harvester Company and fertilizer manufacturers like the American Agricultural Chemical Company and the Virginia-Carolina Chemical Company.

But when it comes to putting $100 or $1000, or multiples thereof, into widely known corporations that are based on agriculture directly and primarily, one must turn to the irrigation companies, become so numerous and active during the last fifteen years.

IRRIGATION.

TRAVELING west of the Missouri, the Easterner wonders why so many of the men he meets seem "land crazy" until he realizes what irrigation means and the difference between an irrigated farm and any other kind of farm.

Take the unirrigated sugar beet crop in Colorado last year. There was too much sun and not enough rain. The crop was short. This year there were floods, and the crop was short again.

Now on irrigated land crop failures are unknown. This is a broad statement, to be qualified only by somebody's rank incompetence.

With a supply of sunshine that is almost equable and a supply of water which can be controlled absolutely, the farmer is no longer the plaything of the elements. He can manufacture crops about as scientifically as a mill turns out cotton cloths.

Hence, one finds 60,000 people added to the population of Idaho through irrigation companies working under the "Carey act." The Twin Falls country, in the southern part of the State, contains the largest private irrigation enterprises in the world. In Montana more than a million acres are now under irrigation. In Utah the watering of about 700,000 acres is under way. In Colorado the work has received a strong impetus from the opening of the Gunnison Tunnel by President Taft on September 23. On this water-distributing system alone the Government is spending some $5,000,000. The lands affected will support about 25,000 citizens. As far off as California a couple of hundred thousand acres are being reclaimed, —in this case by private interests, instead of by the Government.

"REAL" IRRIGATION BONDS.

JUST because water on Western land works miracles, a few ingenious promoters are trying to make it work fables. They are beginning to trade on the growing popularity of the irrigation bond by offering queer kinds of stock or contracts, or whatnot, against propositions inactive outside of their own imaginations.

Now some $200,000,000 of private capital has been put into irrigation projects under proper safeguards. It has been raised largely in Pennsylvania and the Middle West. More lately, the typical "Eastern" banker has awakened to the fact that the real irrigation bond is the real thing. Nor is it difficult to tell it when you see it.

The "real" bonds are of five varieties. First there is the "district" irrigation bond, payable through taxes collected by the county treasurer just the same as any other municipal obligation.

Second is the straight water company bond. The dam, canals, franchises, etc., form the security here.

In a third class the corporations are also private, but own not only the water but also the land which the water irrigates. The land, while covered by the original mortgage, may be bought out by a sinking fund or other provision.

Fourth come bonds issued under the Federal "Carey act." These must be secured by mortgages on the system of irrigation, and also by the lien given by the State to the company operating that system.

A fifth group of "Carey act" companies deposit, in addition to the above, certain of the actual contracts or notes made by settlers to the company in payment of land and water rights. The example which follows belongs to this class.

A TYPICAL IRRIGATION PROPOSITION.

THE test of a good irrigation bond is simple. In fact, it revolves around one word,—*water*. A typical irrigation project of the "Carey act" type, now in the going stage, will furnish illustration of the half-dozen points on which every investor should get satisfaction.

In the first place, the backers of the proposition understand *water*. They are mostly sheep ranchers of substance and prominence in Wyoming who have been watering land of their own for years. The human equation here as in all investments carries more meaning than columns of statistics. In this case railroad officials can be written to who will send printed folders gotten up by the railroads describing the reality of the project, and who will also bear witness to the prominence and experience of the men behind it. By such precautions one can eliminate in a day or two practically all of the unfit irrigation offerings.

In the second place, the land of this Wyoming tract is *water*able. The company operates under the "Carey act" and thus must establish the fact that its land is irrigable to the satisfaction of the engineer of the State, who personally inspects the project. If it

passes him it must receive the approval of the State Board of Land Commissioners. If their verdict is favorable, the maps, surveys, and so on go up to the Secretary of the Interior of the United States.

Third, the *water* is there. The sufficiency of water supply and the practicability of turning the water on to the land are also questions looked into by the authorities above named. This particular company has made a contract with the State allowing it to take water from the river in question.

Fourth, the *water* is being properly managed. The dam is one of the largest reinforced steel concrete dams in the world. Physically, the reservoir is always the critical point. It is thus important to note that the dam is the Ambursen type of reinforced steel concrete. Forty-odd dams like it are in existence and none has ever "gone out" with a flood.

Fifth, the *water* rights are attractive to settlers. The investor and the farmer have the same interest in the raising of large crops economically. Nearly three-fourths of the 36,000 acres have already been sold, without public advertising,—the briefest possible expression of the farmers' confidence. It is important that there is a town of some 3000 people in the center of the tract, with churches, theaters, banks, a Masonic temple, and so on. The best class of irrigation farmer prefers to live where he can be sociable and send his children to school,—just as you and I.

Under this head comes the marketability of the farmer's hay and apples and the rest. No part of the land is more than 8 miles from one of the standard "granger" railroads. A second one is building an extension through the tract. The Wyoming sheep industry also provides a ready local market for great quantities of hay.

Finally, the man who buys the bonds finds behind them not simply the land but the *water*. This last consideration might have been put first. It is of little avail to hold a mortgage on irrigated land which lacks control over the water that gives the land its value. In the example under discussion the laws of Wyoming provide that the water and the land go together. The contract which the settler buys entitles him to so many acres of land and to so many feet of water. It is these contracts and notes which must be placed with a trustee as security behind the bonds to an amount 25 per cent. in excess of their face value.

IDLE FREIGHT CARS.

THE top point of prosperity is usually accompanied by a "car famine." When there is so much freight to move that shippers get down on their knees begging the railroads for more cars it would seem that the railroads must be at their highest earning capacity. But it does not work out that way.

For instance, only eighteen months ago there were about 600,000 idle freight cars in the United States. Early in July there were still 259,000. There were only 106,000 when September opened and only 38,806 when it ended. It looks as if there might soon be another freight car shortage, such as we had in the early fall of 1907 before the panic turned the figures upside down.

The trouble is that some of these cars are better than others. As long as there is a choice, naturally the tendency will be to use the best. But when the surplus becomes a shortage, everything, modern steel structures and old rattle traps, too, is being worked to the limit. And this means that there will be a higher percentage of freight train delays. Couplings will break, brakeshoes will crack, "boxes" will get hot, and so on. Rolling stock efficiency will average lower. This makes the shipper and receiver cross, and it causes the railroad to spend more money in the earning of each dollar.

Of course, the railroad repair shops have been humming this summer to get all rolling stock in shape for the crop movement and other fall rush. Moreover, second and third trackage has been increased since 1907,—and freight capacity with it. Enormous orders have been placed for new equipment.

But it is a tough job that the railroad has,—to keep from losing money when business falls off 12 per cent., as it did during the year ended June 30, 1908, and yet keep rolling stock enough to handle the flow of traffic now swelling again.

So if the news should come before long that everybody wants more cars it will not necessarily mean that everybody is making more money.

PUTTING ON THE BRAKES ABROAD.

LONDON, October 21.—The Bank of England to-day raised its minimum rate of discount from 4 per cent. to 5.

THAT brief announcement in the daily newspapers was skipped last month by a great many readers who will come back to it before they get through. It may not be

very many months, indeed, before the boss and the mechanic, the capitalist and the clerk, and all the rest who depend upon American business activity will have a practical, unpleasant explanation of that news,—also of the advance to 3 per cent. of the Netherlands Bank rate eight days before and the advance from 4 to 5 of the Imperial Bank of Germany a couple of days before that,—and the marking up of private discount rates to 2½ even in gold-hoarding Paris.

Here is the squeaking of the brakes. Enterprise is moving too fast and must be checked, even so near the usual January slow-down.

The point of all this lies in the question: Why do we read no announcement of a raise in the American bank rate?—and the answer: Because there is no American Bank, no central, patriotic institution to protect the borrowers and business men of this country, to foresee their legitimate, natural calls for money and attract it to America as against other countries by "raising the rate."

We have no "rate" to raise.

It is very difficult for us, in the fast-growing New World, to think financially in terms not of sections, of East or West or South, but of nations. Our own job of money distribution is so immense that bankers themselves are among the most apt to forget how much larger, after all, is the world problem, and how much more important.

All those rate increases last month meant that Europe was shutting up its credit-shop; that Englishmen, Dutchmen, Germans, and Frenchmen, having calculated their own money needs for business, for Government loans, etc., and their own recent lendings to help develop the big, new American country, concluded that the thing had gone about far enough.

So each of the banks named, in its responsible public capacity, decrees that outsiders who want credits from its money center shall pay just so much more for them.

By "outsiders" one reads particularly the United States of America. For instance, on October 14 it was decided in England that people who wanted to "carry over" American stocks would have to pay 4½ per cent. interest, although for other securities the rate was only 3 to 3¼.

Lest this should sound as if Europe were trying to "do" America, it may be recalled that she receives from us some $35,000,000 a month in interest and dividends on money furnished mostly by those very English, Dutch, Germans, and French. To them American prosperity means more and safer income.

But each of these countries has its own troubles. In England there is the particular duty of guarding the only big, free, international gold market in the world. For instance, the Bank of England folks were figuring last month that they would be furnishing some $28,000,000 of gold before January 1 to their foreign customers alone,—Egypt with its great cotton crop, Russia, Turkey, South America, and so on.

And every great European bank must retain enough money to care for the new stocks and bonds and notes issued by governments and companies in which its nation is interested; also the loans to its merchants, traders, and speculators of every kind,—all jumping to higher figures with the 1909 good times.

The industrial money needs of the United States are greater than those of any foreign country. Yet it is the only one that has no central bank to protect those needs from a national viewpoint. We have 25,000 sets of bankers, each with the duty of taking care of stockholders first of all. It might be suicidal for any one set to act patriotically. It would be Quixotic, too, because no one set is powerful enough to do much good by itself.

Therefore, because American bankers are the only ones in the civilized world who have no organized way to get together for the best interests of themselves, the American nation is the only one which has not foreseen in time the tightening of money as a world symptom. The 7000 national banks alone, during the first nine months of this year, lost nearly $14,000,000 of their cash while they were increasing their loans $378,000,000,—the largest expansion of any similar period in history, with the exception of one, that in 1907. A significant year for comparison!

Of course, the greatest of international economists may be overcautious once in a while. Maybe there is legitimate need for a fair proportion of the enormous sums that Europe has given lately in exchange for American "finance bills." For many of these there will undoubtedly be substituted "produce" bills, bills of lading of wheat, of steel, or what not shipped to Europe.

Yet an unusual number of millions have lately been raised by such obligations for the purpose of holding stocks, particularly those of certain large industries, up to a price which discounts and anticipates a whole lot of prosperity that has not arrived yet.

THE NEW BOOKS.

A FEW OF THE SEASON'S NOVELS.

It is not often that the English-speaking world is permitted a glimpse into the soul life of another people which is so vivid and impressive as that given by the Spanish novelist Ibañez in his powerful novel "The Shadow of the Cathedral."[1] The present mental and social decadence of Spain is set forth with startling force and vividness in the pages of this book. The hero, an idealist educated for the priesthood, abjures his faith and becomes a revolutionary. After a life of flight, imprisonment, and torture he comes back to the cathedral in the old, proud, decadent city of Toledo and spends his last days under the shadow of this institution, which, with its splendor, its pride, its love of tradition, and its narrowness, so aptly typifies the condition of modern Spain. The translation into English has been made by Mrs. W. A. Gillespie.

The latest "preachment novel" of Hall Caine is a story of Egyptian life and English administration in the land of the Pharaohs.[2] The social, official, and military circles of the Nile country are minutely described with a good deal of plot and melodrama. There is also a great deal of homily and, in the beginning, some action and movement. The "White Prophet," half Christian, half Mohammedan, is the leader of the new Nationalist movement, and his career involves the lives, fortunes, and happiness of all the rest of the characters in the story. On more than one of the more than 600 pages of this novel the reader finds blood-stirring dramatic narrative strength, but from even the most casual perusal it is quite evident that if the tale had been half as long it might easily have been twice as strong.

Readers who have enjoyed the witty, philosophical insight of "Lucas Malet" in her novels "Sir Richard Calmady" and "The Far Horizon" will find in "The Score"[3] a good deal more of the same sort of writing,—and incidentally some of the same characters. The old, old question of art versus domesticity from the standpoint of the woman of genius is again taken up and discussed in the author's piquant way.

Recent stories by Elizabeth Stuart Phelps are "Jonathan and David"[4] and "The Oath of Allegiance,"[5] the latter the main title of a collection consisting of eleven short tales. These are in the author's best vein, all showing her shrewd but kindly psychological insight. "Jonathan and David" is the story of the love of a lonesome old man for his dog and is full of human dignity and pathos.

[1] The Shadow of the Cathedral. By Vincent Blasco Ibañez. 341 pp. $1.35.
[2] The White Prophet. By Hall Caine. Appletons. 613 pp., ill. $1.50.
[3] The Score. By "Lucas Malet." Dutton. 323 pp. $1.50.
[4] Jonathan and David. By Elizabeth Stuart Phelps. Harpers. 48 pp., ill. 50 cents.
[5] The Oath of Allegiance. By Elizabeth Stuart Phelps. Houghton Mifflin Company. 374 pp., ill. $1.25.

THE CATHEDRAL OF TOLEDO, SPAIN.
(The subject of the powerful novel "The Shadow of the Cathedral," by Ibañez.)

A good, wholesome sketch of American independence, dealing chiefly with a New York college lad who has much dignity and good comradeship about him, is Roy Mason's "When I Am Rich."[6] It is not quite a novel, scarcely more than a sketch, but there seems to be much promise in the character delineation.

One of those stirring, "rattling good" stories that are full of action, dramatic movement, and intensity of human passion is Rex Beach's "Silver Horde."[7] It is a tale of the far north of Alaska and contains all the stage scenery and appurtenances necessary thereto. Love and adventure crowd upon each other so swiftly that the reader almost gasps for relief.

A story bringing back vividly the atmosphere of seventeenth century France is H. C. Chatfield-Taylor's "Fame's Pathway,"[8] which deals with the early life and love affairs of Molière. Pathetic character studies of the Paris of that day are woven into a generally pleasing narrative. The volume is illustrated by "JoB" (the Comte de Bréville).

Most of the year's American novels are stories of to-day, and their scenes are laid either in the South or in the Middle West. In "The Romance of a Plain Man"[9] Ellen Glasgow de-

[6] When I Am Rich. By Roy Mason. Dillingham. 343 pp., ill. $1.50.
[7] The Silver Horde. By Rex Beach. Harpers. 390 pp., ill. $1.50.
[8] Fame's Pathway. By H. C. Chatfield-Taylor. Duffield. 341 pp., ill. $1.50.
[9] The Romance of a Plain Man. By Ellen Glasgow. Macmillan. 454 pp. $1.50.

REX BEACH, WHOSE NOVEL, "THE SILVER HORDE," HAS JUST APPEARED.

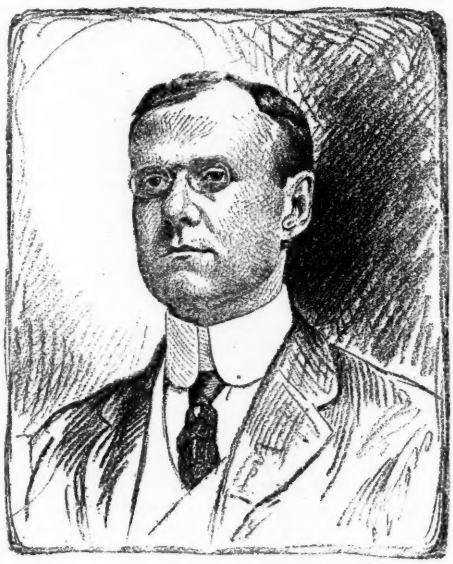
picts the ups and downs of a young Virginian's business career only to show more vividly the constancy of his wife's devotion. Will N. Harben adds "The Redemption of Kenneth Galt"[1] to his series of rural Georgian tales. The book is a protest against the violation of society's established safeguards. Another Southern story of the present is "The Wiving of Lance Cleavcrage,"[2] by Alice MacGowan, the author of "Judith of the Cumberlands."

In "A Certain Rich Man"[3] Mr. William Allen White typifies the Western "get-there" spirit. His hero, after losing all scruples, is at last reached by influences set in motion by an awakened public conscience. Other stories of the Middle West are "The Calling of Dan Matthews,"[4] by Harold Bell Wright, and the brief tale of "The Moccasin Ranch,"[5] by Hamlin Garland. Both are characteristic of the region and the people.

BIOGRAPHY AND MEMOIRS.

Mr. Parker's book of recollections of President Cleveland[6] is easily the most important volume of biography among the publications of the autumn season. It has been known many years that Mr. Parker was on terms of intimacy with Mr. Cleveland, and it adds to the interest of the present volume to know that the plan of the work was heartily approved by its subject, who supplied the author with much of the material. These recollections of a friend present Grover Cleveland as a sincere and honest public man, who cherished few or no resentments, and was ready throughout his career to make sacrifices for the common good. Mr. Cleveland's opinions of his contemporaries and his candid utterances regarding his own part in national politics are here preserved in the form in which he was willing to have them given to the public. Probably the last political letter written by Mr. Cleveland was addressed to Mr. E. Prentiss Bailey, editor of the Utica *Observer,* on March 14, 1908. In this letter Mr. Cleveland expressed his hope that Governor Johnson, of Minnesota, would receive the Presidential nomination of the Democratic party.

All that the American people have learned about General Sherman in the forty-five years that have elapsed since he became a national figure tends to confirm the early impressions that were formed by his contemporaries. His fearlessness and individuality, qualities that made him a national hero, were displayed in his writings hardly less effectively than in his actions as a commander on the field. In his memoirs he left his own record of his public career, and in the "Home Letters,"[7] now for the first time published, the man's human qualities are revealed as never before. These are the letters that he wrote to his wife throughout the years of vicissitudes before the Civil War, during the war itself, and in the years of peace that followed. As the editor of these letters, Mr. Howe, points out, Sherman's letters home were always the frank and authentic records of the events which most nearly concerned him. Their historic importance, therefore, not to speak of their biographical significance, is very great.



H. C. CHATFIELD-TAYLOR.

(Whose novel, "Fame's Pathway," is noticed on page 635.)

[1] The Redemption of Kenneth Galt. By Will N. Harben. Harpers. 353 pp., ill. $1.50.
[2] The Wiving of Lance Cleaverage. By Alice MacGowan. Putnam. 398 pp., ill. $1.35.
[3] A Certain Rich Man. By William Allen White. Macmillan. 434 pp. $1.50.
[4] The Calling of Dan Matthews. By Harold Bell Wright. Chicago: The Book Supply Company. 364 pp., ill. $1.50.
[5] The Moccasin Ranch. By Hamlin Garland. Harpers. 137 pp., ill. $1.
[6] Recollections of Grover Cleveland. By George F. Parker. Century. 400 pp., ill. $3.
[7] Home Letters of General Sherman. Edited by M. A. De Wolfe Howe. Scribners. 412 pp. $2.

It is said by Professor Sears, the author of a new life of Wendell Phillips,[1] that his subject was oftener before the people and for a longer period than any other public speaker of his generation. When we consider the times of agitation during which Wendell Phillips lived, this statement seems the more impressive, for the anti-slavery cause had many advocates who used the public platform. Dr. Sears has given us a most interesting summary of the life of the great orator, and while he was himself a contemporary of Phillips, he writes in the spirit of to-day.

Mr. Hubert Bruce Fuller brings together in a single volume sketches of the Speakers of the House of Representatives[2] from Muhlenberg to Cannon. These biographies are prefaced by a brief essay on the British and Colonial prototype and followed by an interesting résumé of "The English and the American Speakers of To-Day." The development of the power of the Speaker of the House is one of the phenomena of our political life which comparatively few students of history or politics have estimated at its true significance.

COROT IN HIS PRIME.

(From a sketch used as a frontispiece to Meynell's biography of the painter.)

For the first time, so far as we know, a complete and adequate biography of the great French painter Corot has been published. It is entitled "Corot and His Friends"[3] and is full of bits of description and general personalia about the genial genius whose devotion to his art is epitomized in his last words: "I hope with all my heart that there will be painting in heaven." The author of this volume, Everard Meynell, says that the keynote of Corot's life was found in the fact that he was always on good terms with himself. A number of illustrations add greatly to the interest of the volume.

[1] Wendell Phillips, Orator and Agitator. By Lorenzo Sears. Doubleday, Page & Co. 379 pp., por. $1.50.

[2] The Speakers of the House. By Hubert Bruce Fuller. Little, Brown & Co. 311 pp. $2.

[3] Corot and His Friends. By Everard Meynell. A. Wessels Company. 301 pp., ill. $3.25.

MARGARET SANGSTER AS SHE APPEARS TO-DAY.

Mr. Gilbert K. Chesterton, who is one of the two or three most eminent living English essayists, declares that he is the only person in the world who understands George Bernard Shaw, and therefore does not agree with him. With this apparent paradox as a theme, Mr. Chesterton has written a racy and sparkling volume on "G. B. S.,"[4] considering the eccentric Irish genius under these different chapter headings: 1, The Irishman; 2, The Puritan; 3, The Progressive; 4, The Critic; 5, The Dramatist, and, 6, The Philosopher.

The personal recollections of Margaret Sangster[5] cover the period of an active half-century of life. Mrs. Sangster's name comes as near to being a "household word" as perhaps the name of any living American woman. Particularly well is she known to the children of this country from her editorship of and contributions to the *Youth's Companion*, *Harper's Young People*, and other publications for the young.

THREE NEW BOOKS ON THE PROBLEM OF HUMAN FLIGHT.

A very full and painstakingly elaborate work, set forth in popular language, is Charles C. Turner's book, "Aerial Navigation of To-Day,"[6] originally published in England and handled in this country by the Lippincotts. Mr.

[4] George Bernard Shaw. By Gilbert K. Chesterton. John Lane Company. 249 pp., $1.50.

[5] From My Youth Up. By Margaret E. Sangster. Revell & Co. 332 pp., ill. $1.50.

[6] Aerial Navigation of To-Day. By Charles C. Turner. Lippincott. 327 pp., ill. $1.50.

Turner has himself had a long and varied experience in aerial flight, chiefly as a balloonist. His chief aim in this work, he declares, has been to keep himself constantly in the reader's place. The volume is very fully illustrated with portraits, views, and diagrams.

There are few living men who have had such a long, varied, and in general interesting experience with the subject of aerial navigation as Sir Hiram Maxim. His ideas, the results of his experiments, and an explanation of the machinery and methods that have enabled him to arrive at certain conclusions regarding the problem of flight are set forth with diagrams, charts, and other illustrations in his recently issued book, "Artificial and Natural Flight."[1] Mr. Maxim treats the subject, it may be said in general, from the mathematical, scientific point of view.

An excellent handbook of aerial navigation brought up to date is "The Conquest of the Air,"[2] by Professor A. Lawrence Rotch. Professor Rotch's point of view is that of the meteorologist rather than of the inventor or mechanician. As director of the Blue Hill Observatory he has had many years' experience in the study of atmospheric currents and temperatures by means of kites. His chapter on "The Ocean of Air" will be found helpful to amateur aviators. The remainder of the book is made up of a history of aerostation, descriptions of the dirigible balloon and the flying machine respectively, and a brief forecast of the future of aerial navigation.

SOCIOLOGY.

"The City of the Dinner Pail" is the apt characterization of Fall River, Mass., made by Mr. Jonathan Thayer Lincoln and employed as the title of a little volume of essays on the labor problem,[3] which first appeared in the pages of the *Atlantic Monthly* and the *Outlook* and which relate to questions of far more than local application. There are chapters in this book on "The Average Citizen and the Labor Problem," "The Man and the Machine," "The Time Clock," "Trade-Unionism and the Individual Worker," and "The City of Luxury." The writer shows a wide range of information, especially with regard to some of the foreign-born elements in our population, and his suggestions are based on his own experience as a manufacturer and his personal contact with both capitalists and workingmen. His declared purpose is to contribute something to a "better social understanding between the man who buys and the man who sells labor."

In his little book on the American newspaper,[4] Mr. James Edward Rogers sums up those traits of our daily press which have caused the intelligent foreign observers to indict its honesty and have given rise to severe criticisms on the part of American publicists. Mr. Rogers concludes that the American press is what the American public makes it,—in other words, that it is "a reflex of the nation rather than a leader of it."

In a suggestive work on "An American Transportation System"[5] Mr. George A. Rankin maintains that we now have all the ills of federal control of the railroads, with none of the advantages which might be expected from it. The States have lost their authority, but the federal Government has not acquired it. The plan proposed by Mr. Rankin is to make the federal Government responsible affirmatively in place of the mere power to negative State action which it now possesses. Mr. Rankin, indeed, would go as far as to consolidate all our railroads in one corporation, limiting capitalization to the actual cost of facilities provided.

So familiar has the phrase become within recent years that nobody now needs to be told when the words "The Great White Plague" are used in the title of a book or a magazine article that the reference is to tuberculosis. Dr. Edward O. Otis, president of the Boston Tuberculosis Association, has given this title to a book[6] which presents for the every-day reader in plain, untechnical terms the simple facts of the disease known as consumption. In spite of the gravity of the subject Dr. Otis writes in an optimistic vein. Believing in common with the great majority of the medical profession to-day that consumption can be prevented and can even be cured, he devotes this handbook to showing specifically what can be done by individuals and communities to control the ravages of this universal malady. He has incorporated specific directions for eating, sleeping, breathing, and daily habits and exercises.

A second edition of Dr. Kenelm Winslow's work on "The Production and Handling of Clean Milk"[7] has been called for within a little over a year from the first appearance of the book. An attempt has been made in this revision to supply to veterinary, agricultural, and dairy students, and to health officers, a text-book on practical milk inspection and dairy hygiene.

AGRICULTURE.

Dr. Liberty H. Bailey, who stands at the head of farming experts in the United States, makes a new contribution to agricultural and educational literature in the form of a compact handbook on "The Training of Farmers."[8] Among the topics treated by Dr. Bailey in this volume are "The Insufficiencies in Country Life," "The Federation of Rural Forces," "Why Do the Boys Leave the Farm?" "The Common Schools and Farming," "The College of Agriculture and the Farm Youth," and "College Men as Farm Managers."

Dr. William Macdonald sets forth in an interesting way the salient facts of what is now universally known as dry farming.[9] This new branch of agricultural science is defined as "the conservation of soil moisture during long periods of dry weather by means of tillage, together with the growth of drought-resistant

[1] Artificial and Natural Flight. By Sir Hiram Maxim. Macmillan. 166 pp., ill. $1.75.
[2] The Conquest of the Air. By A. L. Rotch. Moffat, Yard & Co. 192 pp., ill. $1.
[3] The City of the Dinner Pail. By Jonathan Thayer Lincoln. Houghton Mifflin Company. 186 pp. $1.25.
[4] The American Newspaper. By James Edward Rogers. University of Chicago Press. 213 pp. $1.

[5] An American Transportation System. By George A Rankin. Putnams. 464 pp. $1.50.
[6] The Great White Plague. By Edward O. Otis, M. D. 330 pp. $1.
[7] The Production and Handling of Clean Milk. By Kenelm Winslow, M. D. William R. Jenkins Company. 367 pp., ill. $3.25.
[8] The Training of Farmers. By L. H. Bailey. Century. 263 pp. $1.
[9] Dry Farming: Its Principles and Practice. By William Macdonald. Century. 290 pp., ill. $1.20.

plants." Articles in the REVIEW OF REVIEWS have explained the principles and practice of dry farming, but we believe that this is the first book to be published on the subject.

LITERATURE.

A really remarkably strong case has been made out by Rabbi Edward N. Calisch for "The Jew in English Literature."[1] He treats the Hebrew as both author and subject, finding four hundred Hebrew writers of English literature since the Elizabethan days.

A new text-book for schools on English literature, emphasizing its history and significance for the present-day life of the English-speaking world, has just been completed by Dr. William J. Long.[2] While Dr. Long's style is clear and pleasing, his aim in this work has been, he tells us, "first, to be accurate, and, second, to be interesting."

A year or so ago French literary circles were interested in an anonymous intimate story of a human life which appeared under the title "Le Journal d'un Reclus." The work, partly autobiographical and partly ruminative, was written in remarkably direct and charming style. An English translation,[3] also made anonymously, has just been issued. In its simplicity and directness it suggests Rousseau or Amiel.

The entire subject of "English Spelling and Spelling Reform"[4] is treated consecutively and with great clarity of style by Professor Lounsbury in his latest book on good standards in English. While, as Professor Lounsbury admits, the subject of spelling reform is not a soul-stirring one, it is nevertheless a useful thing to "bring out with distinctness the real nature of the deep-seated disease" under which English orthography labors. Present English spelling, says Professor Lounsbury, has nothing to recommend it but custom and prejudice and nothing to defend it but ignorance. After this, of course, there is nothing more to be said.

That the work of our American writers represents "a substantial and respectable achievement," that it is at the present time "as full of promise for literary art in the future as is the national literature of any land,"—this is the verdict of Dr. William Edward Simonds, professor of English literature in Knox College, who has just brought out his "Student's History of American Literature."[5] Professor Simonds' work is done in a direct, simple, and logical way, and it seems to us he has accomplished his aim as set forth in his preface of making his text very suggestive and stimulating for study and reading.

Occasionally reference books are so written and printed as to make them interesting to the general reader. In this category, we think, should be included Theodore Stanton's "Manual of American Literature"[6] and Dr. Calvin Thomas' "History of German Literature."[7] Mr. Stanton has done a thorough piece of work, particularly useful in the section devoted to the American novel. Dr. Thomas, who is professor of the Germanic language and literatures at Columbia University, has written a careful and properly proportioned history, and has, moreover, stuck to his text,—literature.

OTHER BOOKS OF THE MONTH.

Mr. William H. Wright makes his book on the grizzly bear[8] intensely interesting. It is a narrative of personal experience rather than a scientific description. Mr. Wright is properly characterized on the title-page as a hunter-naturalist, but his hunting of the grizzly is not all done with a gun. One of the best chapters of the book is an account of a photographic expedition. Besides his own experiences, Mr. Wright draws on the adventures of famous explorers and frontiersmen from Lewis and Clark to James Capen Adams. Mr. Wright declares that the grizzly bear is the noblest wild animal of North America, but the grizzly of the popular imagination is not the real grizzly with which Mr. Wright has become intimately acquainted through years of close association.

A sympathetic description of Labrador, its vastness, and the struggling life of its scattered population is told, to the accompaniment of some interesting illustrations, in a volume entitled "Where the Fishers Go,"[9] by the Rev. P. W. Browne, one of the oldest members of the Nova Scotia Historical Society. History and incident enliven the description.

In the series of reprints of "Original Narratives of Early American History" the volume devoted to "Narratives of New Netherland"[10] appears at the psychological moment, just as we are engaged in celebrating the three hundredth anniversary of the founding of that colony. The volume begins with the important contemporary accounts of Hudson's voyage of 1609 and concludes with the official report on the surrender of New Netherland by Peter Stuyvesant in 1665.

Three companion volumes on nervousness as a disease treat the subject from complementary standpoints. Dr. Mitchell's "Self-Help for Nervous Women"[11] is made up of some familiar talks on the "economy of nervous expenditure." Dr. Sawyer's "The Matter with Nervousness"[12] is a more incisive philosophical dissertation, while Miss Call's "Nerves and Common Sense"[13] is a collection of pleasant suggestive essays which had previously appeared as articles in several woman's journals.

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[1] The Jew in English Literature. By Edward N. Calisch. Richmond, Va.: Bell Book Company. 277 pp. $2.

[2] English Literature. William J. Long. Ginn & Co. 582 pp., ill. $1.35.

[3] The Journal of a Recluse. T. Y. Crowell & Co. 334 pp. $1.25.

[4] English Spelling and Spelling Reform. By Thomas R. Lounsbury. Harpers. 357 pp. $1.50.

[5] A Student's History of American Literature. By W. E. Simonds. Houghton Mifflin Company. 383 pp., ill. $1.10.

[6] A Manual of American Literature. Edited by Theodore Stanton. Putnam. 493 pp. $1.75.

[7] A History of German Literature. By Calvin Thomas. Appleton. 430 pp. $1.50.

[8] The Grizzly Bear. By William H. Wright. Scribners. 274 pp., ill. $1.50.

[9] Where the Fishers Go. By Rev. P. W. Browne. New York: Cochrane Publishing Company. 370 pp., ill. $1.75.

[10] Narratives of New Netherland. Edited by J. Franklin Jameson. Scribners. 478 pp., ill. $3.

[11] Self-Help for Nervous Women. By John K. Mitchell, M. D. Lippincott. 202 pp. $1.

[12] The Matter with Nervousness. By H. C. Sawyer, M. D. San Francisco: Cunningham, Curtiss & Welch. 210 pp. $1.

[13] Nerves and Common Sense. By Annie Payson Call. Little, Brown & Co. 280 pp. $1.25.

OTHER BOOKS RECEIVED.

NOVELS.

A Reaping. By E. F. Benson. Doubleday, Page & Co.

Dragon's Blood. By Henry M. Rideout. Houghton Mifflin Company.

Green Ginger. By Arthur Morrison. Frederick A. Stokes Company.

Half a Chance. By Frederic S. Isham. Bobbs-Merrill.

Pa Flickinger's Folks. By Bessie R. Hoover. Harpers.

Sir Guy and Lady Rannard. By H. N. Dickinson. Duffield & Co.

The Black Sheep. By Joseph Sharts. Duffield & Co.

The Full Glory of Diantha. By Mrs. Philip V. Mighels. Forbes & Co.

The Gold Hunters. By James O. Curwood. Bobbs-Merrill.

The Land of the Living. By Maude R. Warren. Harpers.

The Leopard and the Lily. By Marjorie Bowen. Doubleday, Page & Co.

The Man of Destiny. By Thomas G. Frost. Gramercy Publishing Company.

The Old Wives' Tale. By Arnold Bennett. Hodder & Stoughton.

The Show Girl. By Max Pemberton. John C. Winston Company.

The Stolen Signet. By Frederick M. Smith. Duffield & Co.

Waylaid by Wireless. By Edwin Balmer. Small, Maynard & Co.

BIOGRAPHY.

Boys' Life of Ulysses S. Grant. By Helen Nicolay. Century.

Fernando Cortes and His Conquest of Mexico. By Francis A. MacNutt. Putnam.

George Michael Bedinger: A Kentucky Pioneer. By Danske Dandridge, Shepherdstown, W. Va.

Letters, Lectures, and Addresses of Charles Edward Garman. Edited by Eliza M. Garman. Houghton Mifflin Company.

Life of Frederick the Great (abridged). By Thomas Carlyle. Chicago: A. C. McClurg & Co.

The Story of Isaac Brock. By Walter R. Nursey. A. C. McClurg & Co.

Webster and Kossuth. By Eugene Pivany. Philadelphia: Latin Publishing Company.

LITERATURE.

David: A Drama. By Cale Young Rice. Doubleday, Page & Co.

Holmes: The Autocrat and His Fellow-Boarders. By Samuel McChord Crothers. Houghton Mifflin Company.

Orestes: A Drama. Adapted from Leconte de Lisle by Andre Tridon and Arthur Guiterman. New York: Published by the authors.

Roses. By Hermann Sudermann. Scribners.

Stories by the Essayists. Edited by Arthur Ransome. Dutton & Co.

Stories by Chateaubriand. Edited by Arthur Ransome. Dutton & Co.

Swinburne's Dramas. Edited by Arthur Beatty. T. Y. Crowell & Co.

The Last Letters of Edgar Allan Poe to Sarah Helen Whitman. Edited by James A. Harrison. Putnams.

The Maine Woods. By Henry D. Thoreau. Thomas Y. Crowell & Co.

ESSAYS.

Wild Pastures. By Winthrop Packard. Small, Maynard & Co.

Education. By Ralph Waldo Emerson. Houghton Mifflin Company.

Ideals of Democracy. By John T. Dye. Bobbs-Merrill Company.

Product and Climax. By Simon N. Patten. New York: B. W. Huebsch.

Self-Measurement. By William DeWitt Hyde. B. W. Huebsch.

The Laws of Friendship. By Henry C. King. Macmillan.

The Real College. By Guy Potter Benton. Jennings & Graham.

RELIGION.

American Jewish Year Book, 5670. Philadelphia: Jewish Publication Society of America.

Christmas Builders. By Charles E. Jefferson, D. D. Crowell.

Go Forward. By J. R. Miller, D. D. Crowell.

God, Man, and Human Welfare (Spinoza). Translated by Lydia G. Robinson. Chicago: Open Court Publishing Company.

Homespun Religion. By Elmer E. Higley, D. D. Crowell.

The Boyhood of Christ. By Lew Wallace. Harpers.

The Christmas Child. By Hesba Stretton. Crowell.

The Garden of Eden. By George Hodges. Houghton Mifflin Company.

The Master's Friendships. By J. R. Miller, D. D. Crowell.

The Revelation to the Monk of Evesham Abbey. Rendered into modern English by Valerian Paget. New York: John McBride Company.

The Spiritual World as Described in the Writings of Swedenborg. By J. Howard Spalding. New York: Frederick Warne & Co.

What Does Christmas Really Mean? By John T. McCutcheon and Jenkin Lloyd Jones. Chicago: Forbes & Co.

With Christ in Palestine. By A. T. Schofield, M. D. New York: R. F. Fenno & Co.

The American Review of Reviews.

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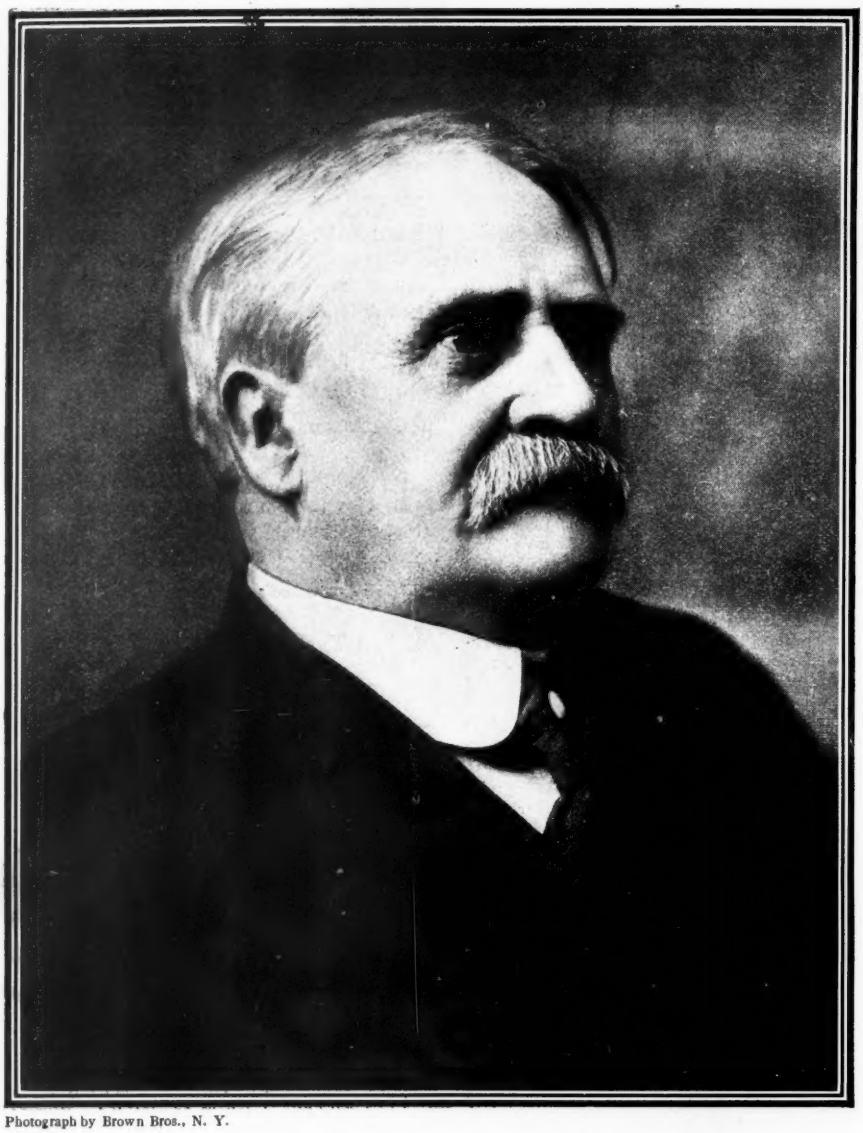

Photograph by Brown Bros., N. Y.

JUDGE HORACE H. LURTON, OF TENNESSEE.

(It was announced late in November that President Taft had selected Judge Horace Harmon Lurton, of Nashville, Tennessee, to fill the vacancy on the Supreme Bench caused by the death of Justice Peckham, of New York. For more than sixteen years Judge Lurton has been a United States Circuit judge, having been appointed by President Cleveland early in 1893. Previous to that time he had been for a number of years a judge of the Supreme Court of Tennessee, and was Chief Justice of the State when called to the federal bench. When President Taft was on the bench, he and Judge Lurton were colleagues in the Sixth Circuit, and were also intimate personal friends. At the time of the last preceding vacancy President Roosevelt thought seriously of appointing Judge Lurton, but named Attorney-General Moody instead. A number of questions of great moment are pending before the Supreme Court or must soon be considered by that high tribunal. Judge Lurton was born in Kentucky and educated in Tennessee. He is dean of the law school of Vanderbilt University, at Nashville, and eminent in other respects for his usefulness as a citizen and lofty character as a man.)